

AP-110

**Beneficial Use/
Recycling
Requests**

2013

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, September 11, 2013 4:45 PM
To: 'Combs, Robert'
Cc: 'Holder, Mike'; VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD
Subject: RE: T-1210 sand reuse (AP-110) Lea/Lovington Refinery

Robert, et al.:

The New Mexico Oil Conservation Division (OCD) is in receipt of the Tank 1210 Sediment Characterization Letter dated September 11, 2013 submitted by TRC Solutions, the OCD has determined that while the sediment is not hazardous waste, it does appear to be oilfield waste that must be disposed at an OCD Permitted Oilfield Waste Facility or RCRA Solid Waste Facility approved by the OCD. Table 2 indicates that the TCLPs do not appear to exceed 40 CFR 261.32 levels.

After review of Table 1, the OCD evaluated the soil (mg/kg) against WQCC 20.6.2.3103 NMAC parameters (mg/L and/or ug/L) with a Dilution Attenuation Factor (DAF) of 20 to determine the potential for sediments in mg/kg units to leach above WQCC standards in mg/L or ug/L.

Based on the OCD evaluation of the composite soil sample, the following parameters have the potential to exceed WQCC water quality standards: Aluminum, Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead and Manganese. The OCD has highlighted the parameters with significant exceedences of the OCD DAF. It appears that groundwater stored in the tank with a sediment base over time may be regarded as a sand filter that adsorbs metals.

The operator is aware that this particular refinery is not regulated under the Resource Conservation and Recovery Act (RCRA); therefore, the OCD WQCC DAF of 20 is more stringent than the US EPA screening limits and worker safety. While the OCD allows operators to utilize Federal screening limits for soil/sediment reuse evaluation purposes, the OCD disapproves the proposed reuse of the Tank 1210 sediment at the facility.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
Office: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US

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

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

From: Chavez, Carl J, EMNRD
Sent: Thursday, July 18, 2013 9:09 AM
To: 'Combs, Robert'
Cc: Holder, Mike; VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD
Subject: RE: T-1210 sand reuse (AP-110) Lea/Lovington Refinery

Robert:

The OCD has completed its review of the requested clarifications, etc.

Please submit the analytical data results with QA/QC to the OCD within 30-days of staging the fresh water sand sediments on liner(s) for OCD review and a final determination.

Thank you.

OCD Environmental Engineers:

Carl Chavez (505) 476-3490

- Discharge Permits, National Pollutant Discharge Elimination System (NPDES); Point-of-Contact; Refineries; and Underground Injection Control Program QA/QC Officer

Jim Griswold (505) 476-3465

- Hydrologist and Groundwater Remediations

Edward J. Hansen (505) 476-3489

- Hydrologist; Groundwater Remediations; and Risk-Based Data Management System (RBDMS)

Brad Jones (505) 476-3487

- Hydrostatic Testing; Pits/Ponds; Produced Water; and Surface Waste Management Facilities

Leonard Lowe (505) 476-3492

- C- 133 Processing (Produced Water Authorization Applications); Discharge Permits and Facility Inspections

Glenn von Gonten (505) 476-3488

- Hydrologist and Groundwater Remediations

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
Office: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US

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

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

From: Combs, Robert [<mailto:Robert.Combs@hollyfrontier.com>]

Sent: Wednesday, July 17, 2013 10:18 PM

To: Chavez, Carl J, EMNRD

Cc: Holder, Mike; VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD

Subject: RE: T-1210 sand reuse

Carl,

I've added responses/clarification to your questions below in bold faced blue font.

Please let me know if you have any further questions or would like to discuss.

Thanks,
Robert

From: Chavez, Carl J, EMNRD [CarlJ.Chavez@state.nm.us]
Sent: Wednesday, July 17, 2013 11:05 AM
To: Combs, Robert
Cc: Holder, Mike; VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD
Subject: RE: T-1210 sand reuse

Robert:

The New Mexico Oil Conservation Division (OCD) has completed its review of the request to reuse sand accumulated at the base of Tank 1210 (fresh water tank).

The operator appears to be attempting to use analytical data from both T103B and 1210 in order to make the case for a beneficial use request for T1210 only? **We only intend to reuse the material in T-1210, not from T-103B. Samples from both materials were sent to the lab on the same chain of custody, but were not intended to be managed together. In fact, the material from T-103B was disposed at R360 this week, see the attached non-hazardous waste manifests. I apologize for any confusion.**

The OCD is confused because the analytical supporting documentation also includes "T1210 & T103B Lovington" Project: Tank 103B Sand Blast and Rust/Absorbant material, which exceeded the WQCC Standard for Barium and Chromium. The operator attached the water quality data to support a request for beneficial use of T1210.

Therefore, the OCD has following questions for clarification of the beneficial use request:

- 1) Is the operator attempting to obtain approval for beneficial use of both T103B and T1210? **No, only for material in T-1210. The material from T-103B is a waste and has been shipped for disposal.**
- 2) Clarification on whether the operator is planning to mix T103B material with T1210 sand? **No; these materials are to be managed separately. The T-103B material was managed as non-hazardous waste and has been shipped for disposal; we request approval for beneficial reuse of the T-1210 sand only.**
- 3) If so, the OCD would not recommend mixing of T103B waste with T1210 waste because the T103B waste has exceeded WQCC Stds. **Agreed; mixing of these materials will not be done.**
- 4) The T1210 waste should be stockpiled on liner and sampled (5 point composite) for metals and total naphthalenes. While the T103B waste material exceeded as mentioned above, the OCD notices that T1210 water quality also detected for metals and naphthalenes were detected in water medial, and below the WQCC Standards. **The T-1210 material will be stored and sampled as recommended. The 5-point composite will be analyzed for total naphthalenes and RCRA 8 metals after the contents have been removed from the tank and a representative sample can be collected.**

Please clarify the above concerns of the OCD in order to reassess the waste material in question for beneficial use.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau

1220 South St. Francis Drive, Santa Fe, New Mexico 87505

Office: (505) 476-3490

E-mail: CarlJ.Chavez@State.NM.US

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

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

From: Combs, Robert [<mailto:Robert.Combs@hollyfrontier.com>]

Sent: Monday, July 15, 2013 10:19 PM

To: Chavez, Carl J, EMNRD

Cc: Holder, Mike

Subject: T-1210 sand reuse

Carl,

You should have received the hardcopy of this letter today that references the reuse of the sand in T-1210 (freshwater tank) in Lovington. I have attached PDF files of the enclosures included in the submittal.

Please call me if you have any questions.

Thanks for your help,

Robert

Robert Combs

Environmental Specialist

The HollyFrontier Companies

P.O. Box 159

Artesia, NM 88211-0159

office: 575-746-5382

cell: 575-308-2718

fax: 575-746-5451

Robert.Combs@hollyfrontier.com

CONFIDENTIALITY NOTICE: This e-mail, and any attachments, may contain information that is privileged and confidential. If you received this message in error, please advise the sender immediately by reply e-mail and do not retain any paper or electronic copies of this message or any attachments. Unless expressly stated, nothing contained in this message should be construed as a digital or electronic signature or a commitment to a binding agreement.

CONFIDENTIALITY NOTICE: This e-mail, and any attachments, may contain information that is privileged, proprietary and/or confidential. If you received this message in error, please advise the sender immediately by reply e-mail and do not retain any paper or electronic copies of this message or any attachments. Unless expressly stated, nothing contained in this message should be construed as a digital or electronic signature or a commitment to a binding agreement.

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, July 18, 2013 9:09 AM
To: 'Combs, Robert'
Cc: Holder, Mike; VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD
Subject: RE: T-1210 sand reuse (AP-110) Lea/Lovington Refinery

Robert:

The OCD has completed its review of the requested clarifications, etc.

Please submit the analytical data results with QA/QC to the OCD within 30-days of staging the fresh water sand sediments on liner(s) for OCD review and a final determination.

Thank you.

OCD Environmental Engineers:

Carl Chavez (505) 476-3490

- Discharge Permits, National Pollutant Discharge Elimination System (NPDES); Point-of-Contact; Refineries; and Underground Injection Control Program QA/QC Officer

Jim Griswold (505) 476-3465

- Hydrologist and Groundwater Remediations

Edward J. Hansen (505) 476-3489

- Hydrologist; Groundwater Remediations; and Risk-Based Data Management System (RBDMS)

Brad Jones (505) 476-3487

- Hydrostatic Testing; Pits/Ponds; Produced Water; and Surface Waste Management Facilities

Leonard Lowe (505) 476-3492

- C- 133 Processing (Produced Water Authorization Applications); Discharge Permits and Facility Inspections

Glenn von Gonten (505) 476-3488

- Hydrologist and Groundwater Remediations

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
Office: (505) 476-3490

E-mail: CarlJ.Chavez@State.NM.US

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

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]

Sent: Wednesday, July 17, 2013 10:18 PM

To: Chavez, Carl J, EMNRD

Cc: Holder, Mike; VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD

Subject: RE: T-1210 sand reuse

Carl,

I've added responses/clarification to your questions below in bold faced blue font.

Please let me know if you have any further questions or would like to discuss.

Thanks,
Robert

From: Chavez, Carl J, EMNRD [CarlJ.Chavez@state.nm.us]
Sent: Wednesday, July 17, 2013 11:05 AM
To: Combs, Robert
Cc: Holder, Mike; VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD
Subject: RE: T-1210 sand reuse

Robert:

The New Mexico Oil Conservation Division (OCD) has completed its review of the request to reuse sand accumulated at the base of Tank 1210 (fresh water tank).

The operator appears to be attempting to use analytical data from both T103B and 1210 in order to make the case for a beneficial use request for T1210 only? **We only intend to reuse the material in T-1210, not from T-103B. Samples from both materials were sent to the lab on the same chain of custody, but were not intended to be managed together. In fact, the material from T-103B was disposed at R360 this week, see the attached non-hazardous waste manifests. I apologize for any confusion.**

The OCD is confused because the analytical supporting documentation also includes "T1210 & T103B Lovington" Project: Tank 103B Sand Blast and Rust/Absorbant material, which exceeded the WQCC Standard for Barium and Chromium. The operator attached the water quality data to support a request for beneficial use of T1210.

Therefore, the OCD has following questions for clarification of the beneficial use request:

- 1) Is the operator attempting to obtain approval for beneficial use of both T103B and T1210? **No, only for material in T-1210. The material from T-103B is a waste and has been shipped for disposal.**
- 2) Clarification on whether the operator is planning to mix T103B material with T1210 sand? **No; these materials are to be managed separately. The T-103B material was managed as non-hazardous waste and has been shipped for disposal; we request approval for beneficial reuse of the T-1210 sand only.**
- 3) If so, the OCD would not recommend mixing of T103B waste with T1210 waste because the T103B waste has exceeded WQCC Stds. **Agreed; mixing of these materials will not be done.**
- 4) The T1210 waste should be stockpiled on liner and sampled (5 point composite) for metals and total naphthalenes. While the T103B waste material exceeded as mentioned above, the OCD notices that T1210 water quality also detected for metals and naphthalenes were detected in water medial, and below the WQCC Standards. **The T-1210 material will be stored and sampled as recommended. The 5-point composite will be analyzed for total naphthalenes and RCRA 8 metals after the contents have been removed from the tank and a representative sample can be collected.**

Please clarify the above concerns of the OCD in order to reassess the waste material in question for beneficial use.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
Office: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US
Website: <http://www.emnrd.state.nm.us/ocd/>

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

From: Combs, Robert [<mailto:Robert.Combs@hollyfrontier.com>]
Sent: Monday, July 15, 2013 10:19 PM
To: Chavez, Carl J, EMNRD
Cc: Holder, Mike
Subject: T-1210 sand reuse

Carl,

You should have received the hardcopy of this letter today that references the reuse of the sand in T-1210 (freshwater tank) in Lovington. I have attached PDF files of the enclosures included in the submittal.

Please call me if you have any questions.

Thanks for your help,

Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

CONFIDENTIALITY NOTICE: This e-mail, and any attachments, may contain information that is privileged and confidential. If you received this message in error, please advise the sender immediately by reply e-mail and do not retain any paper or electronic copies of this message or any attachments. Unless expressly stated, nothing contained in this message should be construed as a digital or electronic signature or a commitment to a binding agreement.

CONFIDENTIALITY NOTICE: This e-mail, and any attachments, may contain information that is privileged, proprietary and/or confidential. If you received this message in error, please advise the sender immediately by reply e-mail and do not retain any paper or electronic copies of this message or any

attachments. Unless expressly stated, nothing contained in this message should be construed as a digital or electronic signature or a commitment to a binding agreement.

NON-HAZARDOUS WASTE MANIFEST

81156

PART I: Generator Union Refining, Lorington Plant
 Address 2426 S. Main Telephone No. (575) 396-5821
 City/State Lorington, NM 88040

ORIGINATION OF WASTE:

Operations Center _____ Permit No. NMD 3160010867

Property Name Lorington
 (Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)		
Drilling Fluids _____	Tank Bottoms _____	Exempt Fluids _____
Completion Fluids _____	Gas Plant Waste _____	C117 No. _____
Contaminated Soil <u>✓</u>	Other Materials _____	Pit No. _____
DESCRIPTION / NOTES		
<u>See generator's manifest</u>		

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

[Signature] Signature of Generator's Authorized Agent Date and Time of Shipment 7/10/13

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name S-Brothers Telephone No. _____
 Address Flood Transport
 City/State Artesia, NM 88210 Truck No. 3

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

[Signature] Signature of Transporter's Agent Date and Time Received 7-15-13

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc. Telephone No. (575) 393-1079
 Address P.O. Box 388
 City/State Hobbs, N.M. 88241-0388 E-mail www.crihobbs.com

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

[Signature] Signature of Facility Agent Date and Time Received 7-15-13

91350

(STS) 36-382
Telephone No.

NA

Permit No. [REDACTED]

(Well, Tank, Battery, Plant, Facility)

Date and Time of Shipment

Telephone No. _____

Task No.

Signature of Transporter's Agent

Date and Time Received _____

(575) 393-1079

Telephone No. _____

www.crihobbs.com

E-mail

I certify that the waste described in Part I was received by me via the transporter described in Part II.

Signature of Facility Agent

Date and Time Received

LEA TERMINAL TANK SUMMARY

TANK	YEAR BUILT	TANK HEIGHT	MAX. FILL	MAX. CAP. BBL	BBLS/FT	PRODUCT
1201A	1973	48'-0"	38'-1"	136,467	3,230	CRUDE OIL
1201B	1973	48'-0"	37'-10"	135,660	3,230	CRUDE OIL
1201C	2005	43'-6"	43'-6"	84,695	1,947	WASTE WATER
1201D		43'-3"	43'-3"	82,608	1,910	WASTE WATER
1202	1973	48'-0"	43'-6"	98,005	2,253	NAPHTHA
1203	1973	48'-0"	36'-2"	46,884	1,132	GASOIL
1204	1973	48'-0"	46'-0"	42,182	917	DIESEL
1205	1973	48'-0"	46'-2"	29,823	646	GASOIL
1206	1973	47'-8"	45'-8"	93,525	2,048	GASOIL
1207	1973	50'-0"	48'-3"	10,856	225	SLOP
1208	1973	33'-0"	31'-6"	5,355	170	EMPTY
1209	1973	48'-0"	33'-0"	12,474	378	Out of Service
1209B		16'-0"	16'-0"	500	34	API SLOP
1210	1973	38'-0"	38'-0"	25,992	684	FRESH WATER
1214	1980	40'-0"	38'-0"	19,114	503	HEAVY SLOP
1215	1980	40'-0"	39'-0"	19,617	503	HEAVY SLOP
101B	1974	48'-0"	37'-0"	60,417	1,470	NAPHTHA
102A	1973	48'-0"	43'-0"	32,035	745	KEROSENE
102B	1973	48'-0"	43'-0"	32,035	745	CASINGHEAD
103A	1973	40'-0"	38'-6"	29,068	755	KEROSENE
103B	1973	40'-0"	38'-6"	29,068	755	DIESEL
104A	1974	40'-0"	38'-2"	14,427	378	KEROSENE
104B	1974	40'-0"	38'-2"	14,427	378	GASOIL
105A	1974	40'-0"	38'-6"	57,673	1,498	ASPHALT
105B	1974	40'-0"	38'-6"	57,673	1,498	ASPHALT
106A		16'-0"	16'-0"	1,040	65	Out of Service
400	2006	19'-10"	19'-10"	1,110	56	CAUSTIC
401	2006	19'-10"	19'-10"	1,110	56	CAUSTIC
402	2006	19'-10"	19'-10"	2,499	126	CAUSTIC
1108	1973	20'-0"	20'-0"	625	31	SLOP

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, July 17, 2013 10:06 AM
To: 'Combs, Robert'
Cc: Holder, Mike; VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD
Subject: RE: T-1210 sand reuse
Attachments: 2013-07-09 T-1210 Sand Reuse Letter.pdf

Robert:

The New Mexico Oil Conservation Division (OCD) has completed its review of the request to reuse sand accumulated at the base of Tank 1210 (fresh water tank).

The operator appears to be attempting to use analytical data from both T103B and 1210 in order to make the case for a beneficial use request for T1210 only?

The OCD is confused because the analytical supporting documentation also includes "T1210 & T103B Lovington" Project: Tank 103B Sand Blast and Rust/Absorbant material, which exceeded the WQCC Standard for Barium and Chromium. The operator attached the water quality data to support a request for beneficial use of T1210.

Therefore, the OCD has following questions for clarification of the beneficial use request:

- 1) Is the operator attempting to obtain approval for beneficial use of both T103B and T1210?
- 2) Clarification on whether the operator is planning to mix T103B material with T1210 sand?
- 3) If so, the OCD would not recommend mixing of T103B waste with T1210 waste because the T103B waste has exceeded WQCC Stds.
- 4) The T1210 waste should be stockpiled on liner and sampled (5 point composite) for metals and total naphthalenes. While the T103B waste material exceeded as mentioned above, the OCD notices that T1210 water quality also detected for metals and naphthalenes were detected in water medial, and below the WQCC Standards.

Please clarify the above concerns of the OCD in order to reassess the waste material in question for beneficial use.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
Office: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US
Website: <http://www.emnrd.state.nm.us/ocd/>

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

From: Combs, Robert [<mailto:Robert.Combs@hollyfrontier.com>]
Sent: Monday, July 15, 2013 10:19 PM
To: Chavez, Carl J, EMNRD
Cc: Holder, Mike
Subject: T-1210 sand reuse

Carl,

You should have received the hardcopy of this letter today that references the reuse of the sand in T-1210 (freshwater tank) in Lovington. I have attached PDF files of the enclosures included in the submittal.

Please call me if you have any questions.

Thanks for your help,

Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

CONFIDENTIALITY NOTICE: This e-mail, and any attachments, may contain information that is privileged and confidential. If you received this message in error, please advise the sender immediately by reply e-mail and do not retain any paper or electronic copies of this message or any attachments. Unless expressly stated, nothing contained in this message should be construed as a digital or electronic signature or a commitment to a binding agreement.

CONFIDENTIALITY NOTICE: This e-mail, and any attachments, may contain information that is privileged, proprietary and/or confidential. If you received this message in error, please advise the sender immediately by reply e-mail and do not retain any paper or electronic copies of this message or any attachments. Unless expressly stated, nothing contained in this message should be construed as a digital or electronic signature or a commitment to a binding agreement.



July 12, 2013

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

FEDEX

Re: Beneficial Reuse of Sand in Fresh Water Tank (T-1210)
Navajo Refining Co. LLC
Lovington, NM AP-110

Dear Carl,

Beginning the week of July 22, 2013, NRC will begin maintenance activities to perform the API 653 inspection of Tank 1210 (fresh water tank) at the Lovington facility. This will include ultrasonic thickness testing of the shell and a complete floor scan to determine if replacement of specific areas or complete replacement of the floor is warranted. Thermal scans of the tank indicate that there may be as much as six feet of solids (fine sand) in the tank. NRC requests approval to beneficially reuse this sand material for the purposes of tank dike construction, fill material, or spill cleanups.

Tank 1210 is used only for storage of raw water supplied by three municipal water wells (North, South and East supply wells); petroleum products/hydrocarbons are not stored in this tank. These three wells are monitored as part of our Semiannual Groundwater sampling events and the East Well and T-1210 are sampled monthly and analyzed for Skinner List constituents; these results are summarized in Tables 1 and 2, respectively. A water sample was recently collected and analyzed against the New Mexico Groundwater Standards (attached, Table 3 and ALS Work Order 1305108). The sand has been sampled and analyzed (attached, Table 4 and ALS Work Order 1305551) and was determined to be non-hazardous. In a brief overview of all the tables, there are several detections of COCs, but none that exceeded WQCC or 40 CFR 261.21-261.24 regulatory limits, and were at concentrations sufficiently low to not be cause for concern. NRC believes that these analytical reports show that the sand does not pose a threat to human health or the environment and is suitable for use as 'clean fill' or for the other on-site purposes mentioned.

Given the estimated level of solids, the volume in the seventy (70) foot diameter tank would be approximately 23,000 cubic feet, or seventy one (71) roll-off bins of waste. Reuse of this material on-site would offset the need for 'clean fill' to be purchased and

delivered (i.e., the sand would be used in lieu of commercially purchased material). If approved, the sand will be stored on-site and used as need arises.

NRC respectfully requests an expedited review in order to proceed with our maintenance schedule. If we do not receive a response from OCD by July 22 (kick-off date), NRC will proceed with removal activities and will store the material in piles on-site (on plastic sheeting) until further guidance is provided.

If you have any questions concerning this request, please contact me at 575-746-5382 or by email robert.combs@hollyfrontier.com

Sincerely,



Robert Combs, Ph.D.
Environmental Specialist

W/out enclosures:

Electronic cc: MWH, MLS, AMS



31-May-2013

Robert Combs
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (575) 746-5382
Fax: (575) 746-5421

Re: New Mexico GW Standards

Work Order: **1305108**

Dear Robert,

ALS Environmental received 2 samples on 02-May-2013 09:20 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 40.

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

Sincerely,

A handwritten signature in cursive script that reads "Sonia West".

Electronically approved by: Jumoke M. Lawal

Sonia West
Project Manager



Certificate No: T104704231-12-10

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Navajo Refining Company
Project: New Mexico GW Standards
Work Order: 1305108

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1305108-01	T-1210	Water		5/1/2013 09:15	5/2/2013 09:20	☐
1305108-02	Trip Blank 041713-33	Water		5/2/2013	5/2/2013 09:20	☒

Client: Navajo Refining Company
Project: New Mexico GW Standards
Work Order: 1305108

Case Narrative

Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.

The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 degrees C.

The analyses for Radium 226 and Radium 228 were subcontracted to ALS Environmental in Ft. Collins, CO.

Batch 69740, Total Metals 6020, Sample 1305137-01A: MS/MSD are for an unrelated sample.

Batch R146864, Volatile Organics 8260, Sample 1305057-01A: MS/MSD are for an unrelated sample.

Batch 69721, Low Level PAH 8270, Sample SLCSL1-130502: Insufficient sample volume was received for MS/MSD.

ALS Environmental

Date: 31-May-13

Client: Navajo Refining Company
Project: New Mexico GW Standards
Sample ID: T-1210
Collection Date: 5/1/2013 09:15 AM

Work Order: 1305108
Lab ID: 1305108-01
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
PCBS BY SW8082A			SW8082				Analyst: NPI
Aroclor 1016	ND		0.500	µg/L	1	5/6/2013	5/7/2013 09:07 AM
Aroclor 1221	ND		0.500	µg/L	1	5/6/2013	5/7/2013 09:07 AM
Aroclor 1232	ND		0.500	µg/L	1	5/6/2013	5/7/2013 09:07 AM
Aroclor 1242	ND		0.500	µg/L	1	5/6/2013	5/7/2013 09:07 AM
Aroclor 1248	ND		0.500	µg/L	1	5/6/2013	5/7/2013 09:07 AM
Aroclor 1254	ND		0.500	µg/L	1	5/6/2013	5/7/2013 09:07 AM
Aroclor 1260	ND		0.500	µg/L	1	5/6/2013	5/7/2013 09:07 AM
Surr: Decachlorobiphenyl	90.3		54-140	%REC	1	5/6/2013	5/7/2013 09:07 AM
Surr: Tetrachloro-m-xylene	87.1		53-137	%REC	1	5/6/2013	5/7/2013 09:07 AM
MERCURY-SW7470A			SW7470				Analyst: OFO
Mercury	ND		0.000200	mg/L	1	5/3/2013	5/3/2013 04:08 PM
METALS			SW6020				Analyst: ALR
Aluminum	ND		0.0100	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Arsenic	ND		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Barium	0.103		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Boron	0.150		0.0500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Cadmium	ND		0.00200	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Chromium	ND		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Cobalt	ND		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Copper	0.0154		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Iron	0.945		0.200	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Lead	ND		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Manganese	0.0298		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Molybdenum	ND		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Nickel	ND		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Selenium	ND		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Silver	ND		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Uranium	ND		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
Zinc	ND		0.00500	mg/L	1	5/3/2013	5/4/2013 02:22 AM
LOW-LEVEL PAHS			SW8270				Analyst: LG
1-Methylnaphthalene	0.233		0.105	µg/L	1	5/2/2013	5/7/2013 03:57 PM
2-Methylnaphthalene	ND		0.105	µg/L	1	5/2/2013	5/7/2013 03:57 PM
Benzo(a)pyrene	ND		0.105	µg/L	1	5/2/2013	5/7/2013 03:57 PM
Naphthalene	ND		0.105	µg/L	1	5/2/2013	5/7/2013 03:57 PM
Surr: 2-Fluorobiphenyl	106		40-125	%REC	1	5/2/2013	5/7/2013 03:57 PM
Surr: 4-Terphenyl-d14	98.6		40-135	%REC	1	5/2/2013	5/7/2013 03:57 PM
Surr: Nitrobenzene-d5	96.4		41-120	%REC	1	5/2/2013	5/7/2013 03:57 PM

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

ALS Environmental

Date: 31-May-13

Client: Navajo Refining Company
Project: New Mexico GW Standards
Sample ID: T-1210
Collection Date: 5/1/2013 09:15 AM

Work Order: 1305108
Lab ID: 1305108-01
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
VOLATILES - SW8260C			SW8260				Analyst: PC
1,1,1-Trichloroethane	ND		5.0	µg/L	1		5/3/2013 07:41 PM
1,1,2,2-Tetrachloroethane	ND		5.0	µg/L	1		5/3/2013 07:41 PM
1,1,2-Trichloroethane	ND		5.0	µg/L	1		5/3/2013 07:41 PM
1,1-Dichloroethane	ND		5.0	µg/L	1		5/3/2013 07:41 PM
1,1-Dichloroethene	ND		5.0	µg/L	1		5/3/2013 07:41 PM
1,2-Dibromoethane	ND		5.0	µg/L	1		5/3/2013 07:41 PM
1,2-Dichloroethane	ND		5.0	µg/L	1		5/3/2013 07:41 PM
Benzene	ND		5.0	µg/L	1		5/3/2013 07:41 PM
Carbon tetrachloride	ND		5.0	µg/L	1		5/3/2013 07:41 PM
Chloroform	ND		5.0	µg/L	1		5/3/2013 07:41 PM
Ethylbenzene	ND		5.0	µg/L	1		5/3/2013 07:41 PM
Methylene chloride	ND		10	µg/L	1		5/3/2013 07:41 PM
Tetrachloroethene	ND		5.0	µg/L	1		5/3/2013 07:41 PM
Toluene	ND		5.0	µg/L	1		5/3/2013 07:41 PM
Trichloroethene	ND		5.0	µg/L	1		5/3/2013 07:41 PM
Vinyl chloride	ND		2.0	µg/L	1		5/3/2013 07:41 PM
Xylenes, Total	ND		15	µg/L	1		5/3/2013 07:41 PM
Surr: 1,2-Dichloroethane-d4	88.0		70-125	%REC	1		5/3/2013 07:41 PM
Surr: 4-Bromofluorobenzene	97.0		72-125	%REC	1		5/3/2013 07:41 PM
Surr: Dibromofluoromethane	95.7		71-125	%REC	1		5/3/2013 07:41 PM
Surr: Toluene-d8	94.5		75-125	%REC	1		5/3/2013 07:41 PM
MISCELLANEOUS ANALYSIS			NA				Analyst: SUB
Miscellaneous Analysis	See Attached				1		5/31/2013
ANIONS - EPA 300.0 (1993)			E300				Analyst: JKP
Chloride	182		2.50	mg/L	5		5/7/2013 12:11 PM
Fluoride	1.17		0.100	mg/L	1		5/2/2013 02:58 PM
Nitrogen, Nitrate (As N)	2.46		0.100	mg/L	1		5/2/2013 02:58 PM
Sulfate	86.2		0.500	mg/L	1		5/2/2013 02:58 PM
Surr: Selenate (surr)	93.4		85-115	%REC	5		5/7/2013 12:11 PM
Surr: Selenate (surr)	95.9		85-115	%REC	1		5/2/2013 02:58 PM
CYANIDE - SM4500CN E			M4500CN E&G				Analyst: EDG
Cyanide	ND		0.0200	mg/L	1		5/6/2013 10:45 AM
PH - SM4500H+ B			SM4500H+ B				Analyst: KL
pH	7.24	H	0.100	pH Units	1		5/3/2013 04:00 PM
Temp Deg C @pH	20.6	H		°C	1		5/3/2013 04:00 PM
PHENOLICS - EPA 420.1			E420.1				Analyst: EDG
Phenolics, Total Recoverable	ND		0.0500	mg/L	1		5/6/2013 12:30 PM

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

ALS Environmental

Date: 31-May-13

Client: Navajo Refining Company
Project: New Mexico GW Standards
Sample ID: T-1210
Collection Date: 5/1/2013 09:15 AM

Work Order: 1305108
Lab ID: 1305108-01
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
TOTAL DISSOLVED SOLIDS			M2540C				Analyst: KAH
Total Dissolved Solids (Residue, Filterable)	730		10.0	mg/L	1		5/6/2013 05:10 PM

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

ALS Environmental

Date: 31-May-13

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **69773** Instrument ID **ECD_7** Method: **SW8082**

MBLK	Sample ID: PBLKW1-130506-69773				Units: µg/L		Analysis Date: 5/7/2013 09:52 AM			
Client ID:	Run ID: ECD_7_130506D				SeqNo: 3206651		Prep Date: 5/6/2013		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	0.1894	0.050	0.2	0	94.7	54-140	0			
Surr: Tetrachloro-m-xylene	0.1807	0.050	0.2	0	90.4	53-137	0			

LCS	Sample ID: PLCSW1-130506-69773				Units: µg/L		Analysis Date: 5/7/2013 10:08 AM			
Client ID:	Run ID: ECD_7_130506D				SeqNo: 3206652		Prep Date: 5/6/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	3.93	0.50	5	0	78.6	54-138				
Aroclor 1260	3.888	0.50	5	0	77.8	57-136				
Surr: Decachlorobiphenyl	0.1752	0.050	0.2	0	87.6	54-140	0			
Surr: Tetrachloro-m-xylene	0.1711	0.050	0.2	0	85.6	53-137	0			

LCSD	Sample ID: PLCSDW1-130506-69773				Units: µg/L		Analysis Date: 5/7/2013 10:23 AM			
Client ID:	Run ID: ECD_7_130506D				SeqNo: 3206653		Prep Date: 5/6/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4.542	0.50	5	0	90.8	54-138	3.93	14.4	20	
Aroclor 1260	4.539	0.50	5	0	90.8	57-136	3.888	15.4	20	
Surr: Decachlorobiphenyl	0.2025	0.050	0.2	0	101	54-140	0.1752	14.5	20	
Surr: Tetrachloro-m-xylene	0.1932	0.050	0.2	0	96.6	53-137	0.1711	12.1	20	

The following samples were analyzed in this batch:

1305108-01C

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **69740** Instrument ID **ICP7500** Method: **SW6020**

MBLK Sample ID: **MBLKW3-050313-69740** Units: **mg/L** Analysis Date: **5/4/2013 12:17 AM**

Client ID: Run ID: **ICP7500_130503A** SeqNo: **3205024** Prep Date: **5/3/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	ND	0.010								
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Boron	ND	0.050								
Cadmium	ND	0.0020								
Chromium	ND	0.0050								
Cobalt	ND	0.0050								
Copper	ND	0.0050								
Iron	ND	0.20								
Lead	ND	0.0050								
Manganese	ND	0.0050								
Molybdenum	ND	0.0050								
Nickel	ND	0.0050								
Selenium	ND	0.0050								
Silver	ND	0.0050								
Uranium	ND	0.0050								
Zinc	ND	0.0050								

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **69740** Instrument ID **ICP7500** Method: **SW6020**

LCS Sample ID: **MLCSW3-050313-69740** Units: **mg/L** Analysis Date: **5/4/2013 12:22 AM**

Client ID: Run ID: **ICP7500_130503A** SeqNo: **3205025** Prep Date: **5/3/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1016	0.010	0.1	0	102	80-120				
Arsenic	0.05094	0.0050	0.05	0	102	80-120				
Barium	0.05006	0.0050	0.05	0	100	80-120				
Boron	0.4729	0.050	0.5	0	94.6	80-120				
Cadmium	0.05199	0.0020	0.05	0	104	80-120				
Chromium	0.04995	0.0050	0.05	0	99.9	80-120				
Cobalt	0.04937	0.0050	0.05	0	98.7	80-120				
Copper	0.0502	0.0050	0.05	0	100	80-120				
Iron	4.902	0.20	5	0	98	80-120				
Lead	0.04829	0.0050	0.05	0	96.6	80-120				
Manganese	0.04971	0.0050	0.05	0	99.4	80-120				
Molybdenum	0.04793	0.0050	0.05	0	95.9	80-120				
Nickel	0.04992	0.0050	0.05	0	99.8	80-120				
Selenium	0.05008	0.0050	0.05	0	100	80-120				
Silver	0.05005	0.0050	0.05	0	100	80-120				
Uranium	0.09499	0.0050	0.1	0	95	80-120				
Zinc	0.05259	0.0050	0.05	0	105	80-120				

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **69740** Instrument ID **ICP7500** Method: **SW6020**

MS Sample ID: **1305137-01AMS** Units: **mg/L** Analysis Date: **5/4/2013 12:42 AM**

Client ID: Run ID: **ICP7500_130503A** SeqNo: **3205029** Prep Date: **5/3/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.3666	0.010	0.1	0.1869	180	80-120				S
Arsenic	0.05092	0.0050	0.05	0.00166	98.5	80-120				
Barium	0.4437	0.0050	0.05	0.4026	82.2	80-120				O
Boron	0.5617	0.050	0.5	0.07423	97.5	80-120				
Cadmium	0.0496	0.0020	0.05	-1.357E-06	99.2	80-120				
Chromium	0.04981	0.0050	0.05	0.0006802	98.3	80-120				
Cobalt	0.04987	0.0050	0.05	0.002344	95.1	80-120				
Copper	0.04828	0.0050	0.05	0.0008425	94.9	80-120				
Iron	4.997	0.20	5	0.1556	96.8	80-120				
Lead	0.04844	0.0050	0.05	0.0007293	95.4	80-120				
Manganese	0.2791	0.0050	0.05	0.2273	104	80-120				O
Molybdenum	0.05013	0.0050	0.05	0.00355	93.2	80-120				
Nickel	0.049	0.0050	0.05	0.001787	94.4	80-120				
Selenium	0.04961	0.0050	0.05	0.0003741	98.5	80-120				
Silver	0.04566	0.0050	0.05	0.00005293	91.2	80-120				
Uranium	0.1304	0.0050	0.1	0.0242	106	80-120				
Zinc	0.05235	0.0050	0.05	0.004613	95.5	80-120				

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **69740** Instrument ID **ICP7500** Method: **SW6020**

MSD	Sample ID: 1305137-01AMSD				Units: mg/L		Analysis Date: 5/4/2013 12:47 AM			
Client ID:	Run ID: ICP7500_130503A				SeqNo: 3205030		Prep Date: 5/3/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.3878	0.010	0.1	0.1869	201	80-120	0.3666	5.62	15	S
Arsenic	0.05223	0.0050	0.05	0.00166	101	80-120	0.05092	2.54	15	
Barium	0.4569	0.0050	0.05	0.4026	109	80-120	0.4437	2.93	15	O
Boron	0.564	0.050	0.5	0.07423	98	80-120	0.5617	0.409	15	
Cadmium	0.04988	0.0020	0.05	-1.357E-06	99.8	80-120	0.0496	0.563	15	
Chromium	0.04978	0.0050	0.05	0.0006802	98.2	80-120	0.04981	0.0602	15	
Cobalt	0.05038	0.0050	0.05	0.002344	96.1	80-120	0.04987	1.02	15	
Copper	0.0478	0.0050	0.05	0.0008425	93.9	80-120	0.04828	0.999	15	
Iron	5.082	0.20	5	0.1556	98.5	80-120	4.997	1.69	15	
Lead	0.04846	0.0050	0.05	0.0007293	95.5	80-120	0.04844	0.0413	15	
Manganese	0.2842	0.0050	0.05	0.2273	114	80-120	0.2791	1.81	15	O
Molybdenum	0.0509	0.0050	0.05	0.00355	94.7	80-120	0.05013	1.52	15	
Nickel	0.04883	0.0050	0.05	0.001787	94.1	80-120	0.049	0.348	15	
Selenium	0.05146	0.0050	0.05	0.0003741	102	80-120	0.04961	3.66	15	
Silver	0.04636	0.0050	0.05	0.00005293	92.6	80-120	0.04566	1.52	15	
Uranium	0.1347	0.0050	0.1	0.0242	110	80-120	0.1304	3.24	15	
Zinc	0.05218	0.0050	0.05	0.004613	95.1	80-120	0.05235	0.325	15	

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **69740** Instrument ID **ICP7500** Method: **SW6020**

DUP Sample ID: **1305137-01ADUP** Units: **mg/L** Analysis Date: **5/4/2013 12:32 AM**

Client ID: Run ID: **ICP7500_130503A** SeqNo: **3205027** Prep Date: **5/3/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.2033	0.010					0.1869	8.41	25	
Arsenic	ND	0.0050					0.00166	0	25	
Barium	0.4088	0.0050					0.4026	1.53	25	
Boron	0.07197	0.050					0.07423	3.09	25	
Cadmium	ND	0.0020					-1.357E-06	0	25	
Chromium	ND	0.0050					0.0006802	0	25	
Cobalt	ND	0.0050					0.002344	0	25	
Copper	ND	0.0050					0.0008425	0	25	
Iron	ND	0.20					0.1556	0	25	
Lead	ND	0.0050					0.0007293	0	25	
Manganese	0.2301	0.0050					0.2273	1.22	25	
Molybdenum	ND	0.0050					0.00355	0	25	
Nickel	ND	0.0050					0.001787	0	25	
Selenium	ND	0.0050					0.0003741	0	25	
Silver	ND	0.0050					0.00005293	0	25	
Uranium	0.02428	0.0050					0.0242	0.33	25	
Zinc	ND	0.0050					0.004613	0	25	

The following samples were analyzed in this batch:

1305108-01D

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

Client: Navajo Refining Company
 Work Order: 1305108
 Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **69743** Instrument ID **Mercury** Method: **SW7470**

MBLK Sample ID: **GBLKW2-050313-69743** Units: **mg/L** Analysis Date: **5/3/2013 03:37 PM**

Client ID: Run ID: **MERCURY_130502A** SeqNo: **3204076** Prep Date: **5/3/2013** 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: **GLCSW2-050313-69743** Units: **mg/L** Analysis Date: **5/3/2013 03:39 PM**

Client ID: Run ID: **MERCURY_130502A** SeqNo: **3204077** Prep Date: **5/3/2013** 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	85-115				

MS Sample ID: **13041073-22AMS** Units: **mg/L** Analysis Date: **5/3/2013 03:48 PM**

Client ID: Run ID: **MERCURY_130502A** SeqNo: **3204080** Prep Date: **5/3/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00495	0.00020	0.005	-0.000003	99.1	85-115				

MSD Sample ID: **13041073-22AMSD** Units: **mg/L** Analysis Date: **5/3/2013 03:50 PM**

Client ID: Run ID: **MERCURY_130502A** SeqNo: **3204081** Prep Date: **5/3/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00517	0.00020	0.005	-0.000003	103	85-115	0.00495	4.35	20	

DUP Sample ID: **13041073-22ADUP** Units: **mg/L** Analysis Date: **5/3/2013 03:43 PM**

Client ID: Run ID: **MERCURY_130502A** SeqNo: **3204079** Prep Date: **5/3/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020					-0.000003	0	20	

The following samples were analyzed in this batch:

1305108-01D

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

Client: Navajo Refining Company
 Work Order: 1305108
 Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **69721** Instrument ID **SV-6** Method: **SW8270**

MBLK	Sample ID: SBLKL1-130502-69721				Units: µg/L		Analysis Date: 5/7/2013 01:38 PM			
Client ID:	Run ID: SV-6_130507A				SeqNo: 3207197		Prep Date: 5/2/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Benzo(a)pyrene	ND	0.10								
Naphthalene	ND	0.10								
Surr: 2-Fluorobiphenyl	2.577	0.10	3.03	0	85	40-125	0			
Surr: 4-Terphenyl-d14	2.971	0.10	3.03	0	98	40-135	0			
Surr: Nitrobenzene-d5	2.341	0.10	3.03	0	77.2	41-120	0			

LCS	Sample ID: SLCSL1-130502-69721				Units: µg/L		Analysis Date: 5/7/2013 01:58 PM			
Client ID:	Run ID: SV-6_130507A				SeqNo: 3207198		Prep Date: 5/2/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	3.738	0.10	3.03	0	123	40-140				
2-Methylnaphthalene	3.671	0.10	3.03	0	121	40-140				
Benzo(a)pyrene	2.267	0.10	3.03	0	74.8	40-140				
Naphthalene	2.797	0.10	3.03	0	92.3	40-140				
Surr: 2-Fluorobiphenyl	2.719	0.10	3.03	0	89.7	40-125	0			
Surr: 4-Terphenyl-d14	2.723	0.10	3.03	0	89.9	40-135	0			
Surr: Nitrobenzene-d5	2.53	0.10	3.03	0	83.5	41-120	0			

LCSD	Sample ID: SLCSDL1-130502-69721				Units: µg/L		Analysis Date: 5/7/2013 02:18 PM			
Client ID:	Run ID: SV-6_130507A				SeqNo: 3207199		Prep Date: 5/2/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	3.209	0.10	3.03	0	106	40-140	3.738	15.2	25	
2-Methylnaphthalene	3.176	0.10	3.03	0	105	40-140	3.671	14.5	25	
Benzo(a)pyrene	2.263	0.10	3.03	0	74.7	40-140	2.267	0.209	25	
Naphthalene	2.798	0.10	3.03	0	92.3	40-140	2.797	0.0108	25	
Surr: 2-Fluorobiphenyl	2.498	0.10	3.03	0	82.4	40-125	2.719	8.46	25	
Surr: 4-Terphenyl-d14	2.666	0.10	3.03	0	88	40-135	2.723	2.14	25	
Surr: Nitrobenzene-d5	2.772	0.10	3.03	0	91.5	41-120	2.53	9.15	25	

The following samples were analyzed in this batch:

1305108-01B

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **R146864** Instrument ID **VOA6** Method: **SW8260**

MBLK Sample ID: **VBLKW-130503-R146864** Units: **µg/L** Analysis Date: **5/3/2013 12:30 PM**

Client ID: Run ID: **VOA6_130503A** SeqNo: **3204975** 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-Dibromoethane	ND	5.0								
1,2-Dichloroethane	ND	5.0								
Benzene	ND	5.0								
Carbon tetrachloride	ND	5.0								
Chloroform	ND	5.0								
Ethylbenzene	ND	5.0								
Methylene chloride	ND	10								
Tetrachloroethene	ND	5.0								
Toluene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl chloride	ND	2.0								
Xylenes, Total	ND	15								
Surr: 1,2-Dichloroethane-d4	42.63	5.0	50	0	85.3	70-125	0			
Surr: 4-Bromofluorobenzene	48.84	5.0	50	0	97.7	72-125	0			
Surr: Dibromofluoromethane	48.63	5.0	50	0	97.3	71-125	0			
Surr: Toluene-d8	47.23	5.0	50	0	94.5	75-125	0			

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **R146864** Instrument ID **VOA6** Method: **SW8260**

LCS	Sample ID: VLCSW-130503-R146864					Units: µg/L		Analysis Date: 5/3/2013 11:12 AM		
Client ID:	Run ID: VOA6_130503A				SeqNo: 3204973		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	45.05	5.0	50	0	90.1	80-120				
1,1,2,2-Tetrachloroethane	42.35	5.0	50	0	84.7	72-120				
1,1,2-Trichloroethane	45.09	5.0	50	0	90.2	80-120				
1,1-Dichloroethane	43.82	5.0	50	0	87.6	76-120				
1,1-Dichloroethene	48.28	5.0	50	0	96.6	73-124				
1,2-Dibromoethane	46.23	5.0	50	0	92.5	80-120				
1,2-Dichloroethane	41.04	5.0	50	0	82.1	78-120				
Benzene	47.08	5.0	50	0	94.2	73-121				
Carbon tetrachloride	47.68	5.0	50	0	95.4	75-125				
Chloroform	44.68	5.0	50	0	89.4	70-130				
Ethylbenzene	48.85	5.0	50	0	97.7	80-120				
Methylene chloride	44.94	10	50	0	89.9	65-133				
Tetrachloroethene	52.58	5.0	50	0	105	79-120				
Toluene	46.32	5.0	50	0	92.6	80-120				
Trichloroethene	51.9	5.0	50	0	104	80-120				
Vinyl chloride	43.41	2.0	50	0	86.8	70-127				
Xylenes, Total	147.7	15	150	0	98.5	80-120				
Surr: 1,2-Dichloroethane-d4	40.63	5.0	50	0	81.3	70-125		0		
Surr: 4-Bromofluorobenzene	48.2	5.0	50	0	96.4	72-125		0		
Surr: Dibromofluoromethane	46.77	5.0	50	0	93.5	71-125		0		
Surr: Toluene-d8	47.56	5.0	50	0	95.1	75-125		0		

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **R146864** Instrument ID **VOA6** Method: **SW8260**

MS	Sample ID: 1305057-01AMS				Units: µg/L		Analysis Date: 5/3/2013 02:35 PM			
Client ID:		Run ID: VOA6_130503A			SeqNo: 3204977		Prep Date:		DF: 20	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	871	100	1000	0	87.1	80-120				
1,1,2,2-Tetrachloroethane	522.1	100	1000	0	52.2	72-120				S
1,1,2-Trichloroethane	910.3	100	1000	0	91	80-120				
1,1-Dichloroethane	878.4	100	1000	0	87.8	76-120				
1,1-Dichloroethene	916.4	100	1000	0	91.6	73-124				
1,2-Dibromoethane	938.4	100	1000	0	93.8	80-120				
1,2-Dichloroethane	1085	100	1000	324.4	76	78-120				S
Benzene	1150	100	1000	276.3	87.4	73-121				
Carbon tetrachloride	878	100	1000	0	87.8	75-125				
Chloroform	978.7	100	1000	60.95	91.8	70-130				
Ethylbenzene	1023	100	1000	117.9	90.5	80-120				
Methylene chloride	944	200	1000	18.61	92.5	65-133				
Tetrachloroethene	1947	100	1000	111.3	184	79-120				S
Toluene	1400	100	1000	599.2	80.1	80-120				
Trichloroethene	1454	100	1000	5.127	145	80-120				S
Vinyl chloride	802.4	40	1000	0	80.2	70-127				
Xylenes, Total	3512	300	3000	753	92	80-120				
Surr: 1,2-Dichloroethane-d4	833.3	100	1000	0	83.3	70-125		0		
Surr: 4-Bromofluorobenzene	951.2	100	1000	0	95.1	72-125		0		
Surr: Dibromofluoromethane	952.5	100	1000	0	95.2	71-125		0		
Surr: Toluene-d8	930	100	1000	0	93	75-125		0		

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

Client: Navajo Refining Company
 Work Order: 1305108
 Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **R146864** Instrument ID **VOA6** Method: **SW8260**

MSD				Sample ID: 1305057-01AMSD			Units: µg/L		Analysis Date: 5/3/2013 03:01 PM		
Client ID:		Run ID: VOA6_130503A			SeqNo: 3204978		Prep Date:		DF: 20		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1,1-Trichloroethane	924.4	100	1000	0	92.4	80-120	871	5.95	20		
1,1,2,2-Tetrachloroethane	206.9	100	1000	0	20.7	72-120	522.1	86.5	20	SR	
1,1,2-Trichloroethane	938.7	100	1000	0	93.9	80-120	910.3	3.07	20		
1,1-Dichloroethane	888.1	100	1000	0	88.8	76-120	878.4	1.09	20		
1,1-Dichloroethene	956.1	100	1000	0	95.6	73-124	916.4	4.24	20		
1,2-Dibromoethane	956.7	100	1000	0	95.7	80-120	938.4	1.93	20		
1,2-Dichloroethane	1113	100	1000	324.4	78.8	78-120	1085	2.56	20		
Benzene	1188	100	1000	276.3	91.2	73-121	1150	3.21	20		
Carbon tetrachloride	960.9	100	1000	0	96.1	75-125	878	9.01	20		
Chloroform	982.5	100	1000	60.95	92.2	70-130	978.7	0.385	20		
Ethylbenzene	1110	100	1000	117.9	99.2	80-120	1023	8.16	20		
Methylene chloride	943	200	1000	18.61	92.4	65-133	944	0.11	20		
Tetrachloroethene	2108	100	1000	111.3	200	79-120	1947	7.97	20	S	
Toluene	1482	100	1000	599.2	88.3	80-120	1400	5.67	20		
Trichloroethene	1867	100	1000	5.127	186	80-120	1454	24.9	20	SR	
Vinyl chloride	832.4	40	1000	0	83.2	70-127	802.4	3.68	20		
Xylenes, Total	3719	300	3000	753	98.9	78-121	3512	5.72	20		
Surr: 1,2-Dichloroethane-d4	844.4	100	1000	0	84.4	70-125	833.3	1.33	20		
Surr: 4-Bromofluorobenzene	964.2	100	1000	0	96.4	72-125	951.2	1.36	20		
Surr: Dibromofluoromethane	936.3	100	1000	0	93.6	71-125	952.5	1.72	20		
Surr: Toluene-d8	943.4	100	1000	0	94.3	75-125	930	1.42	20		

The following samples were analyzed in this batch:

1305108-01A

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **R146698** Instrument ID **ICS2100** Method: **E300** **(Dissolve)**

MBLK	Sample ID: WBLKW1-R146698				Units: mg/L		Analysis Date: 5/1/2013 05:46 PM			
Client ID:	Run ID: ICS2100_130501A				SeqNo: 3201393		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								
<i>Surr: Selenate (surr)</i>	5.285	0.10	5	0	106	85-115	0			

LCS	Sample ID: WLCSW1-R146698				Units: mg/L		Analysis Date: 5/1/2013 06:07 PM			
Client ID:	Run ID: ICS2100_130501A				SeqNo: 3201394		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.376	0.10	4	0	109	90-110				
Nitrogen, Nitrate (As N)	4.018	0.10	4	0	100	90-110				
Sulfate	21.68	0.50	20	0	108	90-110				
<i>Surr: Selenate (surr)</i>	5.142	0.10	5	0	103	85-115	0			

MS	Sample ID: 13041009-01FMS				Units: mg/L		Analysis Date: 5/1/2013 08:36 PM			
Client ID:	Run ID: ICS2100_130501A				SeqNo: 3201401		Prep Date:		DF: 5	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	13	0.50	10	0.23	128	80-120				S
Nitrogen, Nitrate (As N)	10.09	0.50	10	0	101	80-120				H
Sulfate	313.9	2.5	50	266.7	94.3	80-120				O
<i>Surr: Selenate (surr)</i>	24.14	0.50	25	0	96.5	85-115	0			

MSD	Sample ID: 13041009-01FMSD				Units: mg/L		Analysis Date: 5/1/2013 08:57 PM			
Client ID:	Run ID: ICS2100_130501A				SeqNo: 3201402		Prep Date:		DF: 5	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	13.06	0.50	10	0.23	128	80-120	13	0.422	20	S
Nitrogen, Nitrate (As N)	10.09	0.50	10	0	101	80-120	10.09	0.00991	20	H
Sulfate	313.3	2.5	50	266.7	93.1	80-120	313.9	0.197	20	O
<i>Surr: Selenate (surr)</i>	24.06	0.50	25	0	96.2	85-115	24.14	0.32	20	

The following samples were analyzed in this batch:

1305108-01E

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **R146829** Instrument ID **WetChem** Method: **SM4500H+ B (Dissolve)**

LCS Sample ID: **WLCSW2-130503-R146829** Units: **pH Units** Analysis Date: **5/3/2013 04:00 PM**
Client ID: Run ID: **WETCHEM_130503H** SeqNo: **3204259** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.03	0.10	6	0	100	90-110				

DUP Sample ID: **1305108-01EDUP** Units: **pH Units** Analysis Date: **5/3/2013 04:00 PM**
Client ID: **T-1210** Run ID: **WETCHEM_130503H** SeqNo: **3204267** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.25	0.10					7.24	0.138	20	H
Temp Deg C @pH	20.7	0					20.6	0.484		H

The following samples were analyzed in this batch:

1305108-01E

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **R146889** Instrument ID **UV-2450** Method: **M4500CN E&G (Dissolve)**

MBLK	Sample ID: WBLKW1-050613-R146889				Units: mg/L		Analysis Date: 5/6/2013 10:45 AM			
Client ID:	Run ID: UV-2450_130506A				SeqNo: 3205563		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: WLCSW1-050613-R146889				Units: mg/L		Analysis Date: 5/6/2013 10:45 AM			
Client ID:	Run ID: UV-2450_130506A				SeqNo: 3205564		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.173	0.020	0.2	0	86.5	80-120				

LCSD	Sample ID: WLCSDW1-050613-R146889				Units: mg/L		Analysis Date: 5/6/2013 10:45 AM			
Client ID:	Run ID: UV-2450_130506A				SeqNo: 3205577		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.178	0.020	0.2	0	89	80-120	0.173	2.85	20	

MS	Sample ID: 1305101-01BMS				Units: mg/L		Analysis Date: 5/6/2013 10:45 AM			
Client ID:	Run ID: UV-2450_130506A				SeqNo: 3205576		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.162	0.020	0.2	0	81	80-120				

The following samples were analyzed in this batch:

1305108-01F

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **R146902** Instrument ID **UV-2450** Method: **E420.1** **(Dissolve)**

MBLK	Sample ID: WBLKW1-050613-R146902				Units: mg/L		Analysis Date: 5/6/2013 12:30 PM			
Client ID:	Run ID: UV-2450_130506C				SeqNo: 3205831		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	ND	0.050								

LCS	Sample ID: WLCSW1-050613-R146902				Units: mg/L		Analysis Date: 5/6/2013 12:30 PM			
Client ID:	Run ID: UV-2450_130506C				SeqNo: 3205832		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.474	0.050	0.5		0	94.8	80-120			

LCSD	Sample ID: WLCSDW1-050613-R146902				Units: mg/L		Analysis Date: 5/6/2013 12:30 PM			
Client ID:	Run ID: UV-2450_130506C				SeqNo: 3206233		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.484	0.050	0.5		0	96.8	80-120	0.474	2.09	20

MS	Sample ID: 1305108-01GMS				Units: mg/L		Analysis Date: 5/6/2013 12:30 PM			
Client ID: T-1210	Run ID: UV-2450_130506C				SeqNo: 3206232		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total Recoverable	0.467	0.050	0.5		0	93.4	80-120			

The following samples were analyzed in this batch:

1305108-01G

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **R146955** Instrument ID **ICS3000** Method: **E300** **(Dissolve)**

MBLK	Sample ID: WBLKW1-R146955				Units: mg/L		Analysis Date: 5/7/2013 10:45 AM			
Client ID:	Run ID: ICS3000_130507A				SeqNo: 3207249		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								
<i>Surr: Selenate (surr)</i>	4.606	0.10	5	0	92.1	85-115	0			

LCS	Sample ID: WLCSW1-R146955				Units: mg/L		Analysis Date: 5/7/2013 11:06 AM			
Client ID:	Run ID: ICS3000_130507A				SeqNo: 3207250		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.23	0.50	20	0	96.1	90-110				
<i>Surr: Selenate (surr)</i>	4.696	0.10	5	0	93.9	85-115	0			

MS	Sample ID: 1305216-02BMS				Units: mg/L		Analysis Date: 5/7/2013 01:36 PM			
Client ID:	Run ID: ICS3000_130507A				SeqNo: 3207255		Prep Date:		DF: 1000	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	149800	500	10000	141100	87.2	80-120				EO
<i>Surr: Selenate (surr)</i>	4631	100	5000	0	92.6	85-115	0			

MSD	Sample ID: 1305216-02BMSD				Units: mg/L		Analysis Date: 5/7/2013 01:57 PM			
Client ID:	Run ID: ICS3000_130507A				SeqNo: 3207256		Prep Date:		DF: 1000	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	150100	500	10000	141100	90.3	80-120	149800	0.207	20	EO
<i>Surr: Selenate (surr)</i>	4642	100	5000	0	92.8	85-115	4631	0.246	20	

The following samples were analyzed in this batch:

1305108-01E

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

Client: Navajo Refining Company
Work Order: 1305108
Project: New Mexico GW Standards

QC BATCH REPORT

Batch ID: **R146990** Instrument ID **BALANCE1** Method: **M2540C** **(Dissolve)**

MBLK	Sample ID: WBLK-050613-R146990				Units: mg/L		Analysis Date: 5/6/2013 05:10 PM			
Client ID:	Run ID: BALANCE1_130506G				SeqNo: 3207343		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: WLCS-050613-R146990				Units: mg/L		Analysis Date: 5/6/2013 05:10 PM			
Client ID:	Run ID: BALANCE1_130506G				SeqNo: 3207344		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	1052	10	1000	0	105	85-115				

DUP	Sample ID: 1305027-01FDUP				Units: mg/L		Analysis Date: 5/6/2013 05:10 PM			
Client ID:	Run ID: BALANCE1_130506G				SeqNo: 3207333		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	8070	10					8070	0	20	

DUP	Sample ID: 1305214-03ADUP				Units: mg/L		Analysis Date: 5/6/2013 05:10 PM			
Client ID:	Run ID: BALANCE1_130506G				SeqNo: 3208858		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	1392	10					1300	6.84	20	

The following samples were analyzed in this batch:

1305108-01E

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

Client: Navajo Refining Company
Project: New Mexico GW Standards
WorkOrder: 1305108

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
°C	Celsius degrees
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter
pH Units	

Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **02-May-13 09:20**

Work Order: **1305108**

Received by: **JBA**

Checklist completed by Johanna B. Allen
eSignature

03-May-13
Date

Reviewed by: Sonia West
eSignature

03-May-13
Date

Matrices: **water**

Carrier name: **FedEx Priority Overnight**

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):	<u>0.5 C/0.5 C u/c</u> <u>IR 1</u>		
Cooler(s)/Kit(s):	<u>7157</u>		
Date/Time sample(s) sent to storage:	<u>5/2/13 14:00</u>		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☒	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☒	N/A ☐
pH adjusted by:	<u>-</u>		
Login Notes:			

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 1 of 1

coc id: 79804

1305108

NAVAJO REFINING: Navajo Refining Company
Project: New Mexico GW Standards



ALS Project Manager:

[illegible]

Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box)		Results Due Date:	
Glen Rhodes		Fed. Express		☐ STAT WK. Days ☐ 5 WK. Days ☒ 2 WK. Days ☐ 24 Hour			
Relinquished by: Glen Rhodes		Date: 5/1/13	Time: 1025	Received by: <i>[Signature]</i>		Notes: 5/12/13 2:20 PM TAI	
Relinquished by: <i>[Signature]</i>		Date:	Time:	Received by (Laboratory):		Cooler Temp.	
Logged by (Laboratory):		Date:	Time:	Checked by (Laboratory):		Cooler ID: 7157	
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₈ 6-NaHSO ₄ 7-Other		8-4°C 9-5035					
						QC Package: (Check One Box Below) ☒ Level II Std QC ☐ TRRP Checklist ☐ Level III Std QC/Raw Data ☐ TRRP Level IV ☐ Level IV SW345/CLP ☐ Other / EDD	

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

1. Any changes must be made in writing once samples and COC form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

Copyright 2011 by ALS Environmental.

Ex NEW Package
Express US Airbill

FedEx
Tracking
Number

8989 5893 8786

the addressee can be removed for Recipient's records.

5/1/13

FedEx
Tracking Number

898958938786

CATHY TRUBITT

Phone 575 396-5821

NAVJO REFINING CO (LEA)

7406 S MAIN ST

LOVINGTON

State NM ZIP 88260

our Internal Billing Reference

ADDITIONAL SAMPLES

Recipient's
Name

Phone

281 530-968

Company

AL'S LAB

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City

Houston

State

ZIP

77099-4338



8989 5893 8786

0215 HUBA 29 Recipient's Copy

4 Express Package Service

NOTE: Service order has changed. Please select carefully.

Next Business Day

- ☐ FedEx First Overnight
Fastest next business morning delivery to select locations. First business day delivery is selected.
- ☒ FedEx Priority Overnight
Next business morning. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Standard Overnight
Next business afternoon. Saturday Delivery NOT available.

2nd Business Day

- ☐ NEW FedEx 2Day A.M.
Second business morning. Saturday Delivery NOT available.
- ☐ FedEx 2Day
Second business afternoon. Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Express Saver
Third business day. Saturday Delivery NOT available.

5 Packaging

*Declared value limit \$500

- ☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other

6 Special Handling and Delivery Signature Options

- ☐ SATURDAY Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

- ☐ No Signature Required
Package may be left without obtaining a signature for delivery.

- ☐ Direct Signature
Someone at Recipient's address may sign for delivery. Fee applies.

- ☐ Indirect Signature
If no one is available at Recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

- ☒ No ☐ Yes
As per attached Shipper's Declaration and instructions. Dangerous goods including dry ice cannot be shipped on FedEx packaging or placed in a FedEx Express Drop Box.
- ☐ Yes
Shipper's Declaration and instructions.
- ☐ Dry Ice
Dry Ice & UN 1845
- ☐ Cargo Aircraft Only

7 Payment Bill to:

Enter FedEx Acct. No. or Credit Card No. below.

- ☐ Sender ☒ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

Total Packages Total Weight

611

Your liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

Post, Suite 1110 • P.O. #18134 • 51504-2010 FedEx • PRINTED IN U.S.A. 888



ALS Environmental

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

7157

CUS 704 5

Date: 5/1/13
Name: [Signature]
Company: [Signature]

Seal Broken By: [Signature]
Date: 5/1/13



May 31, 2013

Ms. Sonia West
ALS Environmental
10450 Stancliff Rd, Suite 210
Houston, TX 77099

Re: ALS Workorder: 13-05-090
Project Name: None Submitted
Project Number: 1305108

Dear Ms. West:

One water sample was received from ALS Environmental on May 04, 2013. The sample was scheduled for the following analyses:

Radium-226
Radium-228

The results for these analyses are contained in the enclosed report.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Jeff Kujawa
Project Manager

JRK/mlc
Enclosure (s): Report

ALS is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO00078
Arizona (AZ)*	AZ0742
California (CA)	06251CA
Colorado (CO)	CO00078
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO00078
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri	175
Nevada (NV)	CO000782008A
New Jersey (NJ)**	CO003
North Dakota (ND)	R-057
Oklahoma	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241-09-1
Utah (UT)	CO00078
Washington	C1280



1305090

Radium-228:

The sample was analyzed for the presence of ^{228}Ra by low background gas flow proportional counting of ^{228}Ac , which is the ingrown progeny of ^{228}Ra , according to the current revision of SOP 724.

All acceptance criteria were met.

Radium-226:

This sample was prepared and analyzed according to the current revision of SOP 783.

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1305090

Client Name: ALS Environmental

Client Project Name:

Client Project Number: 1305108

Client PO Number: 10-1305108

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
T-1210	1305090-1		WATER	01-May-12	9:15



Subcontractor:
ALS Environmental
225 Commerce Drive
Fort Collins, CO 80524

TEL: (800) 443-1511
FAX: (970) 490-1522
Acct #:

Salesperson Houston House Acct

CHAIN-OF-CUSTODY RECORD

Date: 03-May-13
COC ID: 13998
Due Date: 07-May-13

Page 1 of 1

1305090

Customer Information		Project Information		Parameter/Method Request for Analysis											
Purchase Order	Project Name	Project Number	Project Information	A	B	C	D	E	F	G	H	I	J		
10-1305108	ALS Group USA, Corp.	1305108	ALS Group USA, Corp.												
Work Order	Bill To Company		Accounts Payable												
Company Name	Inv Attn		10450 Stanciliff Rd, Suite 210												
Send Report To	Address														
Address	City/State/Zip		Houston, Texas 77099-4338												
City/State/Zip	Phone		(281) 530-5656												
Phone	Fax		(281) 530-5887												
Fax	eMail Address		Sonia.West@alsglobal.com												
eMail Address	Matrix	Collection Date	24hr	A	B	C	D	E	F	G	H	I	J		
1305108-01H (T-1210)	Water	1/May/2013	9:15	X											

1

Comments:

WO 1305108 - Please analyze for Radium 226/228

Relinquished by: *[Signature]* Date/Time: 3/14/13 10:00
Relinquished by: *[Signature]* Date/Time: 5/4/13 0920
Received by: *[Signature]* Date/Time: 5/4/13 0920
Received by: *[Signature]* Date/Time: 5/4/13 0920

Report/QC Level
Std

Cooler IDs



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: ALS TX

Workorder No: 1305090

Project Manager: LTRK

Initials: LAS Date: 5/4/13

1. Does this project require any special handling in addition to standard ALS procedures?		YES	☒ NO
2. Are custody seals on shipping containers intact?	NONE	☒ YES	NO
3. Are Custody seals on sample containers intact?	☒ NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		☒ YES	NO
5. Are the COC and bottle labels complete and legible?		☒ YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		☒ YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	☒ YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	☒ YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	☒ N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		☒ YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		☒ YES	NO
12. Are all samples within holding times for the requested analyses?		☒ YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		☒ YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	☒ N/A	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	☒ NO
16. Were the samples shipped on ice?		YES	☒ NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	☒ RAD ONLY	YES	☒ NO
Cooler #: <u>1</u>			
Temperature (°C): <u>AMB</u>			
No. of custody seals on cooler: <u>1</u>			
DOT Survey Acceptance Information	External µR/hr reading: <u>14</u>		
	Background µR/hr reading: <u>13</u>		
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? ☒ YES / ☐ NO / ☐ NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? ☒ YES / ☐ NO / ☐ NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: [Signature] 5-9-13

ORIGIN ID: SGRA (281) 530-5656
 SHIP DATE: 03MAY13
 ACTWT: 8.7 LB
 CAD: 300130/CAFE2608
 DIMS: 14x11x10 IN
 BILL SENDER
 ALS LABORATORY GROUP
 10450 STANCLIFF
 SUITE 210
 HOUSTON, TX 77099
 UNITED STATES US

TO ROY FRENCH
 ALS ENVIRONMENTAL
 225 COMMERCE DRIVE
 FORT COLLINS, CO 80524 (US)

1305090 **FedEx** Express

(970) 490-1511

Trk# 4340 2175 5172

PRIORITY OVERNIGHT

225 COMMERCE DRIVE

0260

845 1 A

5172 25.04

ORIGIN ID: SGRA (281) 530-5656
 SHIP DATE: 03MAY13
 ACTWT: 8.7 LB
 CAD: 300130/CAFE2608
 DIMS: 14x11x10 IN
 BILL SENDER
 ALS LABORATORY GROUP
 10450 STANCLIFF
 SUITE 210
 HOUSTON, TX 77099
 UNITED STATES US

TO ROY FRENCH
 ALS ENVIRONMENTAL
 225 COMMERCE DRIVE
 FORT COLLINS CO 80524
 REF: SW/JBARA
 (970) 490-1511
 DEP: ENVIRONMENTAL

FedEx Express

Trk# 4340 2175 5172

PRIORITY OVERNIGHT

80524 DEN
 CO-US

X0 FTCA

845 1 A

5172 25.04

ALS Environmental -- FC

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: 1305108
Sample ID: T-1210
Legal Location:
Collection Date: 5/1/2012 09:15

Date: 30-May-13
Work Order: 1305090
Lab ID: 1305090-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
RA-226 BY RADON EMANATION - METHOD 903.1						
Ra-226	0.29 (+/- 0.21)	LT	PAI 783	0.24 pCi/l	Prep Date: 5/6/2013	PrepBy: PJW
Carr: BARIUM	92.2		40-110 %REC		NA	5/14/2013 15:31
RADIUM-228 ANALYSIS BY GFPC						
Ra-228	0.79 (+/- 0.37)	LT	PAI 724	0.63 pCi/l	Prep Date: 5/23/2013	PrepBy: JTL
Carr: BARIUM	99.5		40-110 %REC		NA	5/28/2013 10:56

ALS Environmental -- FC

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: 1305108
Sample ID: T-1210
Legal Location:
Collection Date: 5/1/2012 09:15

Date: 30-May-13
Work Order: 1305090
Lab ID: 1305090-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
----------	--------	------	--------------	-------	-----------------	---------------

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
G - Sample density differs by more than 15% of LCS density.
D - DER is greater than Control Limit
M - Requested MDC not met.
LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits
NC - Not Calculated for duplicate results less than 5 times MDC
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
U or ND - Indicates that the compound was analyzed for but not detected.
E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
M - Duplicate injection precision was not met.
N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.
B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
E - Analyte concentration exceeds the upper level of the calibration range.
J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
A - A tentatively identified compound is a suspected aldol-condensation product.
X - The analyte was diluted below an accurate quantitation level.
* - The spike recovery is equal to or outside the control criteria used.
+ - The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

ALS Environmental -- FC**SAMPLE SUMMARY REPORT****Client:** ALS Environmental**Date:** 30-May-13**Project:** 1305108**Work Order:** 1305090**Sample ID:** T-1210**Lab ID:** 1305090-1**Legal Location:****Matrix:** WATER**Collection Date:** 5/1/2012 09:15**Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
G - A pattern resembling gasoline was detected in this sample.						
D - A pattern resembling diesel was detected in this sample.						
M - A pattern resembling motor oil was detected in this sample.						
C - A pattern resembling crude oil was detected in this sample.						
4 - A pattern resembling JP-4 was detected in this sample.						
5 - A pattern resembling JP-5 was detected in this sample.						
H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.						
L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.						
Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:						
- gasoline						
- JP-8						
- diesel						
- mineral spirits						
- motor oil						
- Stoddard solvent						
- bunker C						

ALS Environmental -- FC

Date: 5/30/2013 3:34:

Client: ALS Environmental

Work Order: 1305090

Project: 1305108

QC BATCH REPORT

Batch ID: **RE130506-2-3** Instrument ID: **Alpha Scin** Method: **Ra-226 by Radon Emanation - Me**

LCS	Sample ID: RE130506-2				Units: pCi/l		Analysis Date: 5/14/2013 15:31			
Client ID:	Run ID: RE130506-2A				Prep Date: 5/6/2013			DF: NA		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226	46 (+/- 11)	0	44.99		102	67-120				P
Carr: BARIUM	14420		15450		93.4	40-110				

MB	Sample ID: RE130506-2				Units: pCi/l		Analysis Date: 5/14/2013 15:31			
Client ID:	Run ID: RE130506-2A				Prep Date: 5/6/2013			DF: NA		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226	ND	0.154								U
Carr: BARIUM	14510		15450		93.9	40-110				

The following samples were analyzed in this batch:

1305090-1

Client: ALS Environmental
Work Order: 1305090
Project: 1305108

QC BATCH REPORT

Batch ID: **RA130523-1-1** Instrument ID: **LB4100-A** Method: **Radium-228 Analysis by GFPC**

LCS		Sample ID: RA130523-1				Units: pCi/l		Analysis Date: 5/28/2013 11:13			
Client ID:		Run ID: RA130523-1A				Prep Date: 5/23/2013		DF: NA			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual	
Ra-228	9.4 (+/- 2.2)	0.5	9.869		95.3	70-130				P	
Carr: BARIUM	32560		33130		98.3	40-110					

MB		Sample ID: RA130523-1				Units: pCi/l		Analysis Date: 5/28/2013 10:56			
Client ID:		Run ID: RA130523-1A				Prep Date: 5/23/2013			DF: NA		
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-228		ND	0.42								Y1,U
Carr: BARIUM		33190		33130		100	40-110				Y1

The following samples were analyzed in this batch:

1305090-1



22-May-2013

Robert Combs
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (575) 746-5382
Fax: (575) 746-5421

Re: T1210 & T103B - Lovington

Work Order: **1305551**

Dear Robert,

ALS Environmental received 3 samples on 11-May-2013 09:50 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 32.

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

Sincerely,

A handwritten signature in black ink that reads "Sonia West".

Electronically approved by: Sonia West

Sonia West
Project Manager



Certificate No: T104704231-12-10

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Navajo Refining Company
Project: T1210 & T103B - Lovington
Work Order: 1305551

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1305551-01	T-1210 Sand	Solid		5/9/2013 14:50	5/11/2013 09:50	☐
1305551-02	T-103B Sandblast Sand	Solid		5/9/2013 15:00	5/11/2013 09:50	☐
1305551-03	T-103B Rust & Absorbant	Solid		5/9/2013 15:10	5/11/2013 09:50	☐

Client: Navajo Refining Company
Project: T1210 & T103B - Lovington
Work Order: 1305551

Case Narrative

Batch R147469, TCLP Volatile Organics, Sample 1305411-01: MS/MSD is for an unrelated sample.

Batch R147469, TCLP Volatile Organics, Sample MWWER : MS/MSD RPD is for an unrelated sample.

The analysis for Reactive Cyanide and Reactive Sulfide was subcontracted to ALS in Holland, MI.

Batch 7007, TCLP Semivolatiles, Insufficient sample to perform MS/MSD. LCS/LCSD provided as batch quality control.

ALS Environmental

Date: 22-May-13

Client: Navajo Refining Company
Project: T1210 & T103B - Lovington
Sample ID: T-1210 Sand
Collection Date: 5/9/2013 02:50 PM

Work Order: 1305551
Lab ID: 1305551-01
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP MERCURY						
Mercury	ND		SW7470 0.000200	mg/L	Prep Date: 5/15/2013 1	Analyst: OFO 5/15/2013 06:06 PM
TCLP METALS						
Arsenic	ND		SW1311/6020 0.0500	mg/L	Prep Date: 5/15/2013 10	Analyst: ALR 5/16/2013 12:09 AM
Barium	0.236		0.0500	mg/L	10	5/16/2013 12:09 AM
Cadmium	ND		0.0200	mg/L	10	5/16/2013 12:09 AM
Chromium	ND		0.0500	mg/L	10	5/16/2013 12:09 AM
Lead	ND		0.0500	mg/L	10	5/16/2013 12:09 AM
Selenium	ND		0.0500	mg/L	10	5/16/2013 12:09 AM
Silver	ND		0.0500	mg/L	10	5/16/2013 12:09 AM
TCLP SEMIVOLATILES						
2,4,5-Trichlorophenol	ND		SW1311/8270 0.0050	mg/L	Prep Date: 5/15/2013 1	Analyst: ACN 5/16/2013 12:03 AM
2,4,6-Trichlorophenol	ND		0.0050	mg/L	1	5/16/2013 12:03 AM
2,4-Dinitrotoluene	ND		0.0050	mg/L	1	5/16/2013 12:03 AM
Cresols, Total	ND		0.015	mg/L	1	5/16/2013 12:03 AM
Hexachlorobenzene	ND		0.0050	mg/L	1	5/16/2013 12:03 AM
Hexachlorobutadiene	ND		0.0050	mg/L	1	5/16/2013 12:03 AM
Hexachloroethane	ND		0.0050	mg/L	1	5/16/2013 12:03 AM
Nitrobenzene	ND		0.0050	mg/L	1	5/16/2013 12:03 AM
Pentachlorophenol	ND		0.0050	mg/L	1	5/16/2013 12:03 AM
Pyridine	ND		0.0050	mg/L	1	5/16/2013 12:03 AM
Surr: 2,4,6-Tribromophenol	89.2		36-126	%REC	1	5/16/2013 12:03 AM
Surr: 2-Fluorobiphenyl	63.1		43-125	%REC	1	5/16/2013 12:03 AM
Surr: 2-Fluorophenol	64.7		37-125	%REC	1	5/16/2013 12:03 AM
Surr: 4-Terphenyl-d14	80.3		32-125	%REC	1	5/16/2013 12:03 AM
Surr: Nitrobenzene-d5	71.0		37-125	%REC	1	5/16/2013 12:03 AM
Surr: Phenol-d6	83.7		40-125	%REC	1	5/16/2013 12:03 AM
TCLP VOLATILES						
1,1-Dichloroethene	ND		SW1311/8260B 0.10	mg/L	Prep Date: 5/14/2013 20	Analyst: PC 5/16/2013 06:05 AM
1,2-Dichloroethane	ND		0.10	mg/L	20	5/16/2013 06:05 AM
1,4-Dichlorobenzene	ND		0.10	mg/L	20	5/16/2013 06:05 AM
2-Butanone	ND		0.20	mg/L	20	5/16/2013 06:05 AM
Benzene	ND		0.10	mg/L	20	5/16/2013 06:05 AM
Carbon tetrachloride	ND		0.10	mg/L	20	5/16/2013 06:05 AM
Chlorobenzene	ND		0.10	mg/L	20	5/16/2013 06:05 AM
Chloroform	ND		0.10	mg/L	20	5/16/2013 06:05 AM
Tetrachloroethene	ND		0.10	mg/L	20	5/16/2013 06:05 AM
Trichloroethene	ND		0.10	mg/L	20	5/16/2013 06:05 AM

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

ALS Environmental

Date: 22-May-13

Client: Navajo Refining Company
Project: T1210 & T103B - Lovington
Sample ID: T-1210 Sand
Collection Date: 5/9/2013 02:50 PM

Work Order: 1305551
Lab ID: 1305551-01
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl chloride	ND		0.10	mg/L	20	5/16/2013 06:05 AM
Surr: 1,2-Dichloroethane-d4	108		70-125	%REC	20	5/16/2013 06:05 AM
Surr: 4-Bromofluorobenzene	101		72-125	%REC	20	5/16/2013 06:05 AM
Surr: Dibromofluoromethane	102		71-125	%REC	20	5/16/2013 06:05 AM
Surr: Toluene-d8	100		75-125	%REC	20	5/16/2013 06:05 AM
REACTIVE CYANIDE			SW-846			Analyst: HN
Reactive Cyanide	ND		0.100	mg/Kg	1	5/17/2013 09:00 AM
REACTIVE SULFIDE			SW-846			Analyst: HN
Reactive Sulfide	ND		40.0	mg/Kg	1	5/17/2013 09:00 AM
IGNITABILITY			SW1030			Analyst: KL
Ignitability, Solid	Negative			Burn Rate, mm/sec	1	5/14/2013 01:00 PM
PH - SOIL - SW9045D			SW9045B			Analyst: KL
pH	7.73		0.100	pH Units	1	5/14/2013 10:00 AM

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

ALS Environmental

Date: 22-May-13

Client: Navajo Refining Company
Project: T1210 & T103B - Lovington
Sample ID: T-103B Sandblast Sand
Collection Date: 5/9/2013 03:00 PM

Work Order: 1305551
Lab ID: 1305551-02
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP MERCURY						
Mercury	ND		SW7470 0.000200	mg/L	Prep Date: 5/15/2013 1	Analyst: OFO 5/15/2013 06:08 PM
TCLP METALS						
Arsenic	ND		SW1311/6020 0.0500	mg/L	Prep Date: 5/15/2013 10	Analyst: ALR 5/16/2013 01:04 AM
Barium	2.24		0.0500	mg/L	10	5/16/2013 01:04 AM
Cadmium	ND		0.0200	mg/L	10	5/16/2013 01:04 AM
Chromium	ND		0.0500	mg/L	10	5/16/2013 01:04 AM
Lead	ND		0.0500	mg/L	10	5/16/2013 01:04 AM
Selenium	ND		0.0500	mg/L	10	5/16/2013 01:04 AM
Silver	ND		0.0500	mg/L	10	5/16/2013 01:04 AM
TCLP SEMIVOLATILES						
2,4,5-Trichlorophenol	ND		SW1311/8270 0.0050	mg/L	Prep Date: 5/15/2013 1	Analyst: ACN 5/16/2013 03:50 PM
2,4,6-Trichlorophenol	ND		0.0050	mg/L	1	5/16/2013 03:50 PM
2,4-Dinitrotoluene	ND		0.0050	mg/L	1	5/16/2013 03:50 PM
Cresols, Total	ND		0.015	mg/L	1	5/16/2013 03:50 PM
Hexachlorobenzene	ND		0.0050	mg/L	1	5/16/2013 03:50 PM
Hexachlorobutadiene	ND		0.0050	mg/L	1	5/16/2013 03:50 PM
Hexachloroethane	ND		0.0050	mg/L	1	5/16/2013 03:50 PM
Nitrobenzene	ND		0.0050	mg/L	1	5/16/2013 03:50 PM
Pentachlorophenol	ND		0.0050	mg/L	1	5/16/2013 03:50 PM
Pyridine	ND		0.0050	mg/L	1	5/16/2013 03:50 PM
Surr: 2,4,6-Tribromophenol	83.7		36-126	%REC	1	5/16/2013 03:50 PM
Surr: 2-Fluorobiphenyl	68.5		43-125	%REC	1	5/16/2013 03:50 PM
Surr: 2-Fluorophenol	64.3		37-125	%REC	1	5/16/2013 03:50 PM
Surr: 4-Terphenyl-d14	76.3		32-125	%REC	1	5/16/2013 03:50 PM
Surr: Nitrobenzene-d5	76.2		37-125	%REC	1	5/16/2013 03:50 PM
Surr: Phenol-d6	75.3		40-125	%REC	1	5/16/2013 03:50 PM
TCLP VOLATILES						
1,1-Dichloroethene	ND		SW1311/8260B 0.10	mg/L	Prep Date: 5/14/2013 20	Analyst: PC 5/16/2013 06:31 AM
1,2-Dichloroethane	ND		0.10	mg/L	20	5/16/2013 06:31 AM
1,4-Dichlorobenzene	ND		0.10	mg/L	20	5/16/2013 06:31 AM
2-Butanone	ND		0.20	mg/L	20	5/16/2013 06:31 AM
Benzene	ND		0.10	mg/L	20	5/16/2013 06:31 AM
Carbon tetrachloride	ND		0.10	mg/L	20	5/16/2013 06:31 AM
Chlorobenzene	ND		0.10	mg/L	20	5/16/2013 06:31 AM
Chloroform	ND		0.10	mg/L	20	5/16/2013 06:31 AM
Tetrachloroethene	ND		0.10	mg/L	20	5/16/2013 06:31 AM
Trichloroethene	ND		0.10	mg/L	20	5/16/2013 06:31 AM

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

ALS Environmental

Date: 22-May-13

Client: Navajo Refining Company
Project: T1210 & T103B - Lovington
Sample ID: T-103B Sandblast Sand
Collection Date: 5/9/2013 03:00 PM

Work Order: 1305551
Lab ID: 1305551-02
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl chloride	ND		0.10	mg/L	20	5/16/2013 06:31 AM
Surr: 1,2-Dichloroethane-d4	105		70-125	%REC	20	5/16/2013 06:31 AM
Surr: 4-Bromofluorobenzene	101		72-125	%REC	20	5/16/2013 06:31 AM
Surr: Dibromofluoromethane	102		71-125	%REC	20	5/16/2013 06:31 AM
Surr: Toluene-d8	99.8		75-125	%REC	20	5/16/2013 06:31 AM
REACTIVE CYANIDE			SW-846			Analyst: HN
Reactive Cyanide	ND		0.100	mg/Kg	1	5/17/2013 09:00 AM
REACTIVE SULFIDE			SW-846			Analyst: HN
Reactive Sulfide	ND		40.0	mg/Kg	1	5/17/2013 09:00 AM
IGNITABILITY			SW1030			Analyst: KL
Ignitability, Solid	Negative			Burn Rate, mm/sec	1	5/14/2013 01:00 PM
PH - SOIL - SW9045D			SW9045B			Analyst: KL
pH	6.36		0.100	pH Units	1	5/14/2013 10:00 AM

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

ALS Environmental

Date: 22-May-13

Client: Navajo Refining Company
Project: T1210 & T103B - Lovington
Sample ID: T-103B Rust & Absorbant
Collection Date: 5/9/2013 03:10 PM

Work Order: 1305551
Lab ID: 1305551-03
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP MERCURY						
Mercury	ND		SW7470 0.000200	mg/L	Prep Date: 5/15/2013 1	Analyst: OFO 5/15/2013 06:10 PM
TCLP METALS						
Arsenic	ND		SW1311/6020 0.0500	mg/L	Prep Date: 5/15/2013 10	Analyst: ALR 5/16/2013 01:10 AM
Barium	0.228		0.0500	mg/L	10	5/16/2013 01:10 AM
Cadmium	ND		0.0200	mg/L	10	5/16/2013 01:10 AM
Chromium	0.0856		0.0500	mg/L	10	5/16/2013 01:10 AM
Lead	ND		0.0500	mg/L	10	5/16/2013 01:10 AM
Selenium	ND		0.0500	mg/L	10	5/16/2013 01:10 AM
Silver	ND		0.0500	mg/L	10	5/16/2013 01:10 AM
TCLP SEMIVOLATILES						
2,4,5-Trichlorophenol	ND		SW1311/8270 0.0050	mg/L	Prep Date: 5/15/2013 1	Analyst: ACN 5/16/2013 04:13 PM
2,4,6-Trichlorophenol	ND		0.0050	mg/L	1	5/16/2013 04:13 PM
2,4-Dinitrotoluene	ND		0.0050	mg/L	1	5/16/2013 04:13 PM
Cresols, Total	ND		0.015	mg/L	1	5/16/2013 04:13 PM
Hexachlorobenzene	ND		0.0050	mg/L	1	5/16/2013 04:13 PM
Hexachlorobutadiene	ND		0.0050	mg/L	1	5/16/2013 04:13 PM
Hexachloroethane	ND		0.0050	mg/L	1	5/16/2013 04:13 PM
Nitrobenzene	ND		0.0050	mg/L	1	5/16/2013 04:13 PM
Pentachlorophenol	ND		0.0050	mg/L	1	5/16/2013 04:13 PM
Pyridine	ND		0.0050	mg/L	1	5/16/2013 04:13 PM
Surr: 2,4,6-Tribromophenol	81.8		36-126	%REC	1	5/16/2013 04:13 PM
Surr: 2-Fluorobiphenyl	66.8		43-125	%REC	1	5/16/2013 04:13 PM
Surr: 2-Fluorophenol	67.8		37-125	%REC	1	5/16/2013 04:13 PM
Surr: 4-Terphenyl-d14	76.0		32-125	%REC	1	5/16/2013 04:13 PM
Surr: Nitrobenzene-d5	76.1		37-125	%REC	1	5/16/2013 04:13 PM
Surr: Phenol-d6	72.4		40-125	%REC	1	5/16/2013 04:13 PM
TCLP VOLATILES						
1,1-Dichloroethene	ND		SW1311/8260B 0.10	mg/L	Prep Date: 5/14/2013 20	Analyst: PC 5/16/2013 06:57 AM
1,2-Dichloroethane	ND		0.10	mg/L	20	5/16/2013 06:57 AM
1,4-Dichlorobenzene	ND		0.10	mg/L	20	5/16/2013 06:57 AM
2-Butanone	ND		0.20	mg/L	20	5/16/2013 06:57 AM
Benzene	ND		0.10	mg/L	20	5/16/2013 06:57 AM
Carbon tetrachloride	ND		0.10	mg/L	20	5/16/2013 06:57 AM
Chlorobenzene	ND		0.10	mg/L	20	5/16/2013 06:57 AM
Chloroform	ND		0.10	mg/L	20	5/16/2013 06:57 AM
Tetrachloroethene	ND		0.10	mg/L	20	5/16/2013 06:57 AM
Trichloroethene	ND		0.10	mg/L	20	5/16/2013 06:57 AM

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

ALS Environmental

Date: 22-May-13

Client: Navajo Refining Company
Project: T1210 & T103B - Lovington
Sample ID: T-103B Rust & Absorbant
Collection Date: 5/9/2013 03:10 PM

Work Order: 1305551
Lab ID: 1305551-03
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl chloride	ND		0.10	mg/L	20	5/16/2013 06:57 AM
Surr: 1,2-Dichloroethane-d4	105		70-125	%REC	20	5/16/2013 06:57 AM
Surr: 4-Bromofluorobenzene	101		72-125	%REC	20	5/16/2013 06:57 AM
Surr: Dibromofluoromethane	101		71-125	%REC	20	5/16/2013 06:57 AM
Surr: Toluene-d8	98.5		75-125	%REC	20	5/16/2013 06:57 AM
REACTIVE CYANIDE			SW-846			Analyst: HN
Reactive Cyanide	ND		0.100	mg/Kg	1	5/17/2013 09:00 AM
REACTIVE SULFIDE			SW-846			Analyst: HN
Reactive Sulfide	ND		40.0	mg/Kg	1	5/17/2013 09:00 AM
IGNITABILITY			SW1030			Analyst: KL
Ignitability, Solid	Negative			Burn Rate, mm/sec	1	5/14/2013 01:00 PM
PH - SOIL - SW9045D			SW9045B			Analyst: KL
pH	6.65		0.100	pH Units	1	5/14/2013 10:00 AM

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

ALS Environmental

Date: 22-May-13

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **70011** Instrument ID **ICP7500** Method: **SW1311/6020**

MBLK		Sample ID: MBLKT1-051413-70011				Units: mg/L		Analysis Date: 5/15/2013 11:54 PM		
Client ID:		Run ID: ICP7500_130515A				SeqNo: 3217132		Prep Date: 5/15/2013		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.050								
Barium	ND	0.050								
Cadmium	ND	0.020								
Chromium	ND	0.050								
Lead	ND	0.050								
Selenium	ND	0.050								
Silver	ND	0.050								

MBLK		Sample ID: MBLKW3-051513-70011				Units: mg/L		Analysis Date: 5/15/2013 11:59 PM		
Client ID:		Run ID: ICP7500_130515A				SeqNo: 3217133		Prep Date: 5/15/2013		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.050								
Barium	ND	0.050								
Cadmium	ND	0.020								
Chromium	ND	0.050								
Lead	ND	0.050								
Selenium	ND	0.050								
Silver	ND	0.050								

LCS		Sample ID: MLCSW3-051513-70011				Units: mg/L		Analysis Date: 5/16/2013 12:04 AM		
Client ID:		Run ID: ICP7500_130515A				SeqNo: 3217134		Prep Date: 5/15/2013		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.4377	0.050	0.5	0	87.5	80-120	0			
Barium	0.4343	0.050	0.5	0	86.9	80-120	0			
Cadmium	0.4399	0.020	0.5	0	88	80-120	0			
Chromium	0.4512	0.050	0.5	0	90.2	80-120	0			
Lead	0.4308	0.050	0.5	0	86.2	80-120	0			
Selenium	0.4353	0.050	0.5	0	87.1	80-120	0			
Silver	0.4585	0.050	0.5	0	91.7	80-120	0			

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

QC Page: 1 of 11

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **70011** Instrument ID **ICP7500** Method: **SW1311/6020**

MS		Sample ID: 1305551-01AMS				Units: mg/L		Analysis Date: 5/16/2013 12:24 AM		
Client ID: T-1210 Sand		Run ID: ICP7500_130515A				SeqNo: 3217138		Prep Date: 5/15/2013		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.4583	0.050	0.5	0.004401	90.8	75-125	0			
Barium	0.6636	0.050	0.5	0.2362	85.5	75-125	0			
Cadmium	0.4565	0.020	0.5	0.00358	90.6	75-125	0			
Chromium	0.4427	0.050	0.5	0.003821	87.8	75-125	0			
Lead	0.4401	0.050	0.5	0.009689	86.1	75-125	0			
Selenium	0.4559	0.050	0.5	0.002796	90.6	75-125	0			
Silver	0.4329	0.050	0.5	0.002365	86.1	75-125	0			

MSD		Sample ID: 1305551-01AMSD				Units: mg/L		Analysis Date: 5/16/2013 12:29 AM		
Client ID: T-1210 Sand		Run ID: ICP7500_130515A				SeqNo: 3217139		Prep Date: 5/15/2013		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.46	0.050	0.5	0.004401	91.1	75-125	0.4583	0.37	20	
Barium	0.681	0.050	0.5	0.2362	89	75-125	0.6636	2.59	20	
Cadmium	0.465	0.020	0.5	0.00358	92.3	75-125	0.4565	1.84	20	
Chromium	0.4556	0.050	0.5	0.003821	90.4	75-125	0.4427	2.87	20	
Lead	0.4442	0.050	0.5	0.009689	86.9	75-125	0.4401	0.927	20	
Selenium	0.5019	0.050	0.5	0.002796	99.8	75-125	0.4559	9.61	20	
Silver	0.4518	0.050	0.5	0.002365	89.9	75-125	0.4329	4.27	20	

DUP		Sample ID: 1305551-01ADUP				Units: mg/L		Analysis Date: 5/16/2013 12:14 AM		
Client ID: T-1210 Sand		Run ID: ICP7500_130515A				SeqNo: 3217136		Prep Date: 5/15/2013		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.050	0	0	0	0-0	0.004401	0	25	
Barium	0.2481	0.050	0	0	0	0-0	0.2362	4.91	25	
Cadmium	ND	0.020	0	0	0	0-0	0.00358	0	25	
Chromium	ND	0.050	0	0	0	0-0	0.003821	0	25	
Lead	ND	0.050	0	0	0	0-0	0.009689	0	25	
Selenium	ND	0.050	0	0	0	0-0	0.002796	0	25	
Silver	ND	0.050	0	0	0	0-0	0.002365	0	25	

The following samples were analyzed in this batch:

1305551-01A	1305551-02A	1305551-03A
-------------	-------------	-------------

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

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **70018** Instrument ID **Mercury** Method: **SW7470**

MBLK	Sample ID: GBLKW2-051513-70018				Units: mg/L		Analysis Date: 5/15/2013 04:53 PM			
Client ID:	Run ID: MERCURY_130514A				SeqNo: 3217226		Prep Date: 5/15/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

MBLK	Sample ID: GBLKT1-051413-70018				Units: mg/L		Analysis Date: 5/15/2013 05:05 PM			
Client ID:	Run ID: MERCURY_130514A				SeqNo: 3217232		Prep Date: 5/15/2013		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			

LCS	Sample ID: GLCSW2-051513-70018				Units: mg/L		Analysis Date: 5/15/2013 04:55 PM			
Client ID:	Run ID: MERCURY_130514A				SeqNo: 3217227		Prep Date: 5/15/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00537	0.00020	0.005	0	107	80-120	0			

MS	Sample ID: 1305517-01DMS				Units: mg/L		Analysis Date: 5/15/2013 05:01 PM			
Client ID:	Run ID: MERCURY_130514A				SeqNo: 3217230		Prep Date: 5/15/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00531	0.00020	0.005	-0.000027	107	75-125	0			

MSD	Sample ID: 1305517-01DMSD				Units: mg/L		Analysis Date: 5/15/2013 05:03 PM			
Client ID:	Run ID: MERCURY_130514A				SeqNo: 3217231		Prep Date: 5/15/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00535	0.00020	0.005	-0.000027	108	75-125	0.00531	0.75	20	

DUP	Sample ID: 1305517-01DDUP				Units: mg/L		Analysis Date: 5/15/2013 04:59 PM			
Client ID:	Run ID: MERCURY_130514A				SeqNo: 3217229		Prep Date: 5/15/2013		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	-0.000027	0	20	

The following samples were analyzed in this batch:

1305551-01A	1305551-02A	1305551-03A
-------------	-------------	-------------

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

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **70007** Instrument ID **SV-3** Method: **SW1311/8270**

MBLK		Sample ID: SBLKT1-130515-70007				Units: µg/L		Analysis Date: 5/15/2013 01:55 PM		
Client ID:		Run ID: SV-3_130516C				SeqNo: 3218817		Prep Date: 5/15/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
Cresols, Total	ND	15								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Nitrobenzene	ND	5.0								
Pentachlorophenol	ND	5.0								
Pyridine	ND	5.0								
<i>Surr: 2,4,6-Tribromophenol</i>	88.05	5.0	100	0	88.1	36-126	0			
<i>Surr: 2-Fluorobiphenyl</i>	72.35	5.0	100	0	72.4	43-125	0			
<i>Surr: 2-Fluorophenol</i>	66.19	5.0	100	0	66.2	37-125	0			
<i>Surr: 4-Terphenyl-d14</i>	87	5.0	100	0	87	32-125	0			
<i>Surr: Nitrobenzene-d5</i>	80.37	5.0	100	0	80.4	37-125	0			
<i>Surr: Phenol-d6</i>	73.42	5.0	100	0	73.4	40-125	0			

LCS		Sample ID: SLCST1-130515-70007				Units: µg/L		Analysis Date: 5/15/2013 02:17 PM		
Client ID:		Run ID: SV-3_130516C				SeqNo: 3218818		Prep Date: 5/15/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	71.41	5.0	100	0	71.4	55-120	0			
2,4,6-Trichlorophenol	68.16	5.0	100	0	68.2	55-120	0			
2,4-Dinitrotoluene	41.21	5.0	50	0	82.4	55-125	0			
Cresols, Total	215.8	15	250	0	86.3	40-120	0			
Hexachlorobenzene	38.23	5.0	50	0	76.5	55-120	0			
Hexachlorobutadiene	34.36	5.0	50	0	68.7	55-120	0			
Hexachloroethane	36.16	5.0	50	0	72.3	55-120	0			
Nitrobenzene	39.26	5.0	50	0	78.5	55-120	0			
Pentachlorophenol	76.65	5.0	100	0	76.7	50-135	0			
Pyridine	26.82	5.0	50	0	53.6	30-120	0			
<i>Surr: 2,4,6-Tribromophenol</i>	82.4	5.0	100	0	82.4	36-126	0			
<i>Surr: 2-Fluorobiphenyl</i>	66.12	5.0	100	0	66.1	43-125	0			
<i>Surr: 2-Fluorophenol</i>	82.37	5.0	100	0	82.4	37-125	0			
<i>Surr: 4-Terphenyl-d14</i>	84.83	5.0	100	0	84.8	32-125	0			
<i>Surr: Nitrobenzene-d5</i>	74.75	5.0	100	0	74.8	37-125	0			
<i>Surr: Phenol-d6</i>	89.24	5.0	100	0	89.2	40-125	0			

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

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **70007** Instrument ID **SV-3** Method: **SW1311/8270**

LCSD		Sample ID: SLCSDT1-130515-70007				Units: µg/L		Analysis Date: 5/15/2013 02:40 PM		
Client ID:		Run ID: SV-3_130516C				SeqNo: 3218819		Prep Date: 5/15/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	80.26	5.0	100	0	80.3	55-120	71.41	11.7	25	
2,4,6-Trichlorophenol	74.79	5.0	100	0	74.8	55-120	68.16	9.27	25	
2,4-Dinitrotoluene	39.5	5.0	50	0	79	55-125	41.21	4.23	25	
Cresols, Total	221.2	15	250	0	88.5	40-120	215.8	2.47	25	
Hexachlorobenzene	41.13	5.0	50	0	82.3	55-120	38.23	7.32	25	
Hexachlorobutadiene	34.38	5.0	50	0	68.8	55-120	34.36	0.0614	25	
Hexachloroethane	38.19	5.0	50	0	76.4	55-120	36.16	5.45	25	
Nitrobenzene	40.72	5.0	50	0	81.4	55-120	39.26	3.65	25	
Pentachlorophenol	81.36	5.0	100	0	81.4	50-135	76.65	5.96	25	
Pyridine	27.83	5.0	50	0	55.7	30-120	26.82	3.68	25	
Surr: 2,4,6-Tribromophenol	88.82	5.0	100	0	88.8	36-126	82.4	7.5	25	
Surr: 2-Fluorobiphenyl	76.8	5.0	100	0	76.8	43-125	66.12	14.9	25	
Surr: 2-Fluorophenol	81.72	5.0	100	0	81.7	37-125	82.37	0.795	25	
Surr: 4-Terphenyl-d14	93.99	5.0	100	0	94	32-125	84.83	10.2	25	
Surr: Nitrobenzene-d5	79.92	5.0	100	0	79.9	37-125	74.75	6.68	25	
Surr: Phenol-d6	88.16	5.0	100	0	88.2	40-125	89.24	1.21	25	

MS		Sample ID: 1305551-01AMS				Units: µg/L		Analysis Date: 5/16/2013 12:25 AM		
Client ID: T-1210 Sand		Run ID: SV-3_130516C				SeqNo: 3218822		Prep Date: 5/15/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	75.29	5.0	100	0	75.3	55-120	0			
2,4,6-Trichlorophenol	71.33	5.0	100	0	71.3	55-120	0			
2,4-Dinitrotoluene	40.48	5.0	50	0	81	55-125	0			
Cresols, Total	226.3	15	250	0	90.5	40-120	0			
Hexachlorobenzene	40.08	5.0	50	0	80.2	55-120	0			
Hexachlorobutadiene	34.52	5.0	50	0	69	55-120	0			
Hexachloroethane	36.39	5.0	50	0	72.8	55-120	0			
Nitrobenzene	41.96	5.0	50	0	83.9	55-120	0			
Pentachlorophenol	68.57	5.0	100	0	68.6	50-135	0			
Pyridine	41.08	5.0	50	0	82.2	30-120	0			
Surr: 2,4,6-Tribromophenol	89.48	5.0	100	0	89.5	36-126	0			
Surr: 2-Fluorobiphenyl	72.25	5.0	100	0	72.3	43-125	0			
Surr: 2-Fluorophenol	82.28	5.0	100	0	82.3	37-125	0			
Surr: 4-Terphenyl-d14	90.28	5.0	100	0	90.3	32-125	0			
Surr: Nitrobenzene-d5	79.31	5.0	100	0	79.3	37-125	0			
Surr: Phenol-d6	94.28	5.0	100	0	94.3	40-125	0			

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

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **70007** Instrument ID **SV-3** Method: **SW1311/8270**

The following samples were analyzed in this batch:

1305551-01A	1305551-02A	1305551-03A
-------------	-------------	-------------

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

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **R147469** Instrument ID **VOA6** Method: **SW1311/8260B**

MBLK	Sample ID: VBLKW-130515-R147469				Units: µg/L		Analysis Date: 5/16/2013 12:01 AM			
Client ID:	Run ID: VOA6_130515C				SeqNo: 3218154		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
2-Butanone	ND	10								
Benzene	ND	5.0								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroform	ND	5.0								
Tetrachloroethene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl chloride	ND	2.0								
<i>Surr: 1,2-Dichloroethane-d4</i>										
	52.94	5.0	50	0	106	70-125	0			
<i>Surr: 4-Bromofluorobenzene</i>										
	50.07	5.0	50	0	100	72.4-125	0			
<i>Surr: Dibromofluoromethane</i>										
	50.2	5.0	50	0	100	71.2-125	0			
<i>Surr: Toluene-d8</i>										
	50.08	5.0	50	0	100	75-125	0			

MBLK	Sample ID: MBLKV1-130514-R147469				Units: µg/L		Analysis Date: 5/16/2013 05:39 AM			
Client ID:	Run ID: VOA6_130515C				SeqNo: 3218166		Prep Date: 5/14/2013		DF: 20	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	ND	100								
1,2-Dichloroethane	ND	100								
1,4-Dichlorobenzene	ND	100								
2-Butanone	ND	200								
Benzene	ND	100								
Carbon tetrachloride	ND	100								
Chlorobenzene	ND	100								
Chloroform	ND	100								
Tetrachloroethene	ND	100								
Trichloroethene	ND	100								
Vinyl chloride	ND	40								
<i>Surr: 1,2-Dichloroethane-d4</i>										
	1090	100	1000	0	109	70-125	0			
<i>Surr: 4-Bromofluorobenzene</i>										
	1012	100	1000	0	101	72.4-125	0			
<i>Surr: Dibromofluoromethane</i>										
	1023	100	1000	0	102	71.2-125	0			
<i>Surr: Toluene-d8</i>										
	999.3	100	1000	0	99.9	75-125	0			

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

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **R147469** Instrument ID **VOA6** Method: **SW1311/8260B**

LCS		Sample ID: VLCSW-130515-R147469				Units: µg/L		Analysis Date: 5/15/2013 11:09 PM		
Client ID:		Run ID: VOA6_130515C				SeqNo: 3218153		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	49.03	5.0	50	0	98.1	73-124	0			
1,2-Dichloroethane	47.28	5.0	50	0	94.6	76-120	0			
1,4-Dichlorobenzene	45.55	5.0	50	0	91.1	70-130	0			
2-Butanone	111.9	10	100	0	112	70-130	0			
Benzene	48.44	5.0	50	0	96.9	70-128	0			
Carbon tetrachloride	45.47	5.0	50	0	90.9	70-130	0			
Chlorobenzene	45.94	5.0	50	0	91.9	72-127	0			
Chloroform	49.81	5.0	50	0	99.6	70-130	0			
Tetrachloroethene	46.48	5.0	50	0	93	70-130	0			
Trichloroethene	48.72	5.0	50	0	97.4	72-129	0			
Vinyl chloride	48.71	2.0	50	0	97.4	70-130	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	51.45	5.0	50	0	103	70-125	0			
<i>Surr: 4-Bromofluorobenzene</i>	49.86	5.0	50	0	99.7	72-125	0			
<i>Surr: Dibromofluoromethane</i>	49.99	5.0	50	0	100	71-125	0			
<i>Surr: Toluene-d8</i>	49.71	5.0	50	0	99.4	75-125	0			

MS		Sample ID: 1305411-01AMS				Units: µg/L		Analysis Date: 5/16/2013 01:19 AM		
Client ID:		Run ID: VOA6_130515C				SeqNo: 3218156		Prep Date:		DF: 250
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	8581	1,200	12500	0	68.6	73-124	0			S
1,2-Dichloroethane	11550	1,200	12500	0	92.4	76-120	0			
1,4-Dichlorobenzene	9774	1,200	12500	0	78.2	70-130	0			
2-Butanone	28690	2,500	25000	0	115	70-130	0			
Benzene	20140	1,200	12500	17410	21.8	70-128	0			S
Carbon tetrachloride	7982	1,200	12500	0	63.9	70-130	0			S
Chlorobenzene	10860	1,200	12500	0	86.9	72-127	0			
Chloroform	11420	1,200	12500	0	91.3	70-130	0			
Tetrachloroethene	8346	1,200	12500	0	66.8	70-130	0			S
Trichloroethene	9962	1,200	12500	0	79.7	72-129	0			
Vinyl chloride	7501	500	12500	0	60	70-130	0			S
<i>Surr: 1,2-Dichloroethane-d4</i>	12970	1,200	12500	0	104	70-125	0			
<i>Surr: 4-Bromofluorobenzene</i>	12540	1,200	12500	0	100	72-125	0			
<i>Surr: Dibromofluoromethane</i>	12300	1,200	12500	0	98.4	71-125	0			
<i>Surr: Toluene-d8</i>	12440	1,200	12500	0	99.5	75-125	0			

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

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **R147469** Instrument ID **VOA6** Method: **SW1311/8260B**

MSD				Sample ID: 1305411-01AMSD			Units: µg/L		Analysis Date: 5/16/2013 01:45 AM	
Client ID:				Run ID: VOA6_130515C			SeqNo: 3218157		Prep Date:	
									DF: 250	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	9337	1,200	12500	0	74.7	73-124	8581	8.43	20	
1,2-Dichloroethane	11370	1,200	12500	0	91	76-120	11550	1.6	20	
1,4-Dichlorobenzene	10500	1,200	12500	0	84	70-130	9774	7.11	20	
2-Butanone	27450	2,500	25000	0	110	70-130	28690	4.41	20	
Benzene	26860	1,200	12500	17410	75.6	70-128	20140	28.6	20	R
Carbon tetrachloride	9388	1,200	12500	0	75.1	70-130	7982	16.2	20	
Chlorobenzene	10960	1,200	12500	0	87.6	72-127	10860	0.855	20	
Chloroform	11260	1,200	12500	0	90	70-130	11420	1.44	20	
Tetrachloroethene	9565	1,200	12500	0	76.5	70-130	8346	13.6	20	
Trichloroethene	10510	1,200	12500	0	84.1	72-129	9962	5.37	20	
Vinyl chloride	8274	500	12500	0	66.2	70-130	7501	9.8	20	S
<i>Surr: 1,2-Dichloroethane-d4</i>	12900	1,200	12500	0	103	70-125	12970	0.518	20	
<i>Surr: 4-Bromofluorobenzene</i>	12550	1,200	12500	0	100	72-125	12540	0.0692	20	
<i>Surr: Dibromofluoromethane</i>	12450	1,200	12500	0	99.6	71-125	12300	1.22	20	
<i>Surr: Toluene-d8</i>	12460	1,200	12500	0	99.7	75-125	12440	0.135	20	

The following samples were analyzed in this batch:

1305551-01A	1305551-02A	1305551-03A
-------------	-------------	-------------

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

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **R147345** Instrument ID **WetChem** Method: **SW9045B (Dissolve)**

LCS Sample ID: **WLCSS1-051413-R147345** Units: **pH Units** Analysis Date: **5/14/2013 10:00 AM**
Client ID: Run ID: **WETCHEM_130514H** SeqNo: **3214963** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	5.99	0.10	6	0	99.8	90-110	0			

DUP Sample ID: **1305548-01ADUP** Units: **pH Units** Analysis Date: **5/14/2013 10:00 AM**
Client ID: Run ID: **WETCHEM_130514H** SeqNo: **3214983** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	9.26	0.10	0	0	0	0-0	9.22	0.433	20	

The following samples were analyzed in this batch:

1305551-01A	1305551-02A	1305551-03A
-------------	-------------	-------------

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

Client: Navajo Refining Company
Work Order: 1305551
Project: T1210 & T103B - Lovington

QC BATCH REPORT

Batch ID: **R147348** Instrument ID **WetChem** Method: **SW1030** **(Dissolve)**

DUP Sample ID: **1305551-03ADUP** Units: **Burn Rate, mm/se** Analysis Date: **5/14/2013 01:00 PM**

Client ID: **T-103B Rust & Absorbant** Run ID: **WETCHEM_130514K** SeqNo: **3215013** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ignitability, Solid	ND	0	0	0	0		0	0	25	

The following samples were analyzed in this batch:

1305551-01A	1305551-02A	1305551-03A
-------------	-------------	-------------

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

Client: Navajo Refining Company
Project: T1210 & T103B - Lovington
WorkOrder: 1305551

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
Burn Rate, mm/sec	
mg/Kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
pH Units	

Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **11-May-13 09:50**

Work Order: **1305551**

Received by: **JBA**

Checklist completed by Makenzie L. Henderson 13-May-13
eSignature Date

Reviewed by: Senia West 15-May-13
eSignature Date

Matrices: **Solid**

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):	<u>1.5c/1.5c C/U</u> <u>IR1</u>		
Cooler(s)/Kit(s):	<u>5147</u>		
Date/Time sample(s) sent to storage:	<u>5/13/13 18:41</u>		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☒
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
pH adjusted?	Yes ☐	No ☐	N/A ☒
pH adjusted by:	<u>-</u>		
Login Notes:			

Client Contacted:

Date Contacted:

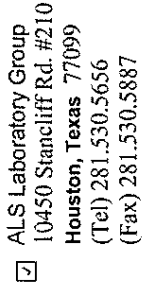
Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

Page 1 of 1

NAVAJO REFINING: Navajo Refining Company
Project: T1210 & T103B - Lovington



Customer Information						Project Information						Parameter/Method Request for Analysis									
Purchase Order		Project Name	T-1210 & T-103B - Lovington	A	TCLP Volatiles																
Work Order		Project Number		B	TCLP Semi-Volatiles																
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company	C	TCLP Metals																
Send Report To	Robert Combs	Invoice Attn.	Robert Combs	D	R. C. I.																
Address	P. O. Box 159	Address	501 East Main	E																	
City/State/Zip	Artesia, New Mexico 88211-0159	City/State/Zip	Artesia, New Mexico 88210	F																	
Phone	(575) 748-3311	Phone	(575) 748-3311	G																	
Fax	(575) 746-5451	Fax	(575) 746-5451	H																	
e-Mail Address	Robert.Combs@hollyfrontier.com	e-Mail Address	Robert.Combs@hollyfrontier.com	I																	
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold				
1	T-1210 Sand	5/9/13	14:50	Solid	Chill	1	X	X	X	X											
2	T-103B Sandblast Sand	5/9/13	15:00	Solid	Chill	1	X	X	X	X											
3	T-103B Rust & Absorbant	5/9/13	15:10	Solid	Chill	1	X	X	X	X											
4																					
5																					
6																					
7																					
8																					
9																					
10																					

ALS Project Manager: Pat Lynch

Shipper's Please Print & Sign: Glen Rhodes

Relinquished by: Glen Rhodes Date: 5/9/13 Time: 1545

Relinquished by: Date: Time:

Logged by (Laboratory): Date: Time:

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

QC Package: (Check Box Below)
☐ Level II: Standard QC
☐ Level III: Std QC + Raw Data
☐ Level IV: SW846 CLP-Like
 Other: _____

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

Copyright 2008 by ALS Laboratory Group

edEx NEW Package Express US Airbill
 FedEx Tracking Number 8989 5893 8801

From (this portion can be removed for Recipient's records)
 Date Tracking Number 898958938801

Sender's Name CATHY TRUETT Phone 578 374-8801

Company NAVASO REFINING CO (LEA)

Address 7406 S MAIN ST Dept./Floor/Suite/Room

C LOVINGTON State NM ZIP 88240

For Internal Billing Reference SAND SMOKE TK

To Recipient's Name Phone

Company ALS LAB

Address 10450 STANCLIFF RD
 We cannot deliver to P.O. boxes or P.O. ZIP codes Dept./Floor/Suite/Room

Address STE 210
 Use this line for 2nd HOLD location address or for continuation of your shipping address.

City Houston State TX ZIP 77099



8989 5893 8801

0215
 Recipient's Copy

4 Express Package Service
 NOTE: Service order has changed. Please select carefully. Packages up to 150 lbs. For packages over 150 lbs, use the memo FedEx Express Freight US Airbill.

Next Business Day
☐ FedEx First Overnight
☒ FedEx Priority Overnight
☐ FedEx Standard Overnight
 2 or 3 Business Days
☐ NEW FedEx 2Day A.M.
☐ FedEx 2Day
☐ FedEx Express Saver

5 Packaging *Declared value limit \$500
☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other

6 Special Handling and Delivery Signature Options

☒ SATURDAY Delivery
☐ No Signature Required
☐ Direct Signature
☐ Indirect Signature
 Does this shipment contain dangerous goods?
☐ No ☐ Yes ☐ Yes ☐ Dry Ice ☐ Cargo Aircraft Only

7 Payment Bill to:
 Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No.
☐ Sender ☒ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check
 Total Packages Total Weight Credit Card Acct.
 Your liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

Rev. Date 11/02 • Part #163139 • ©1994-2010 FedEx • PRINTED IN U.S.A. 595

CUSTODY SEAL

5/10/13 Time: 7:30 a.m.
 4401er Sandover
 11/13



ALS Environment
 10450 Stancliff Rd., Suite 210
 Houston, Texas 77099
 Tel. +1 281 530 5656
 Fax. +1 281 530 5887
 Date: _____
 Name: _____
 Company: _____

1305551

Client: ALS Environmental
 Project: 1305551
 Work Order: 1305595

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1305595-01	1305551-01B	Solid		5/9/2013 14:50	5/15/2013 10:00	☐
1305595-02	1305551-02B	Solid		5/9/2013 15:00	5/15/2013 10:00	☐
1305595-03	1305551-03B	Solid		5/9/2013 15:10	5/15/2013 10:00	☐

Client: ALS Environmental
Project: 1305551
WorkOrder: 1305595

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
mg/Kg	Milligrams per Kilogram

ALS Group USA, Corp**Date:** 17-May-13**Client:** ALS Environmental
Project: 1305551**Work Order:** 1305595**Lab ID:** 1305595-01A
Client Sample ID: 1305551-01B**Collection Date:** 5/9/2013 2:50:00 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, REACTIVE Cyanide, Reactive	ND		SW7.3.3.2 40.0	mg/Kg	1	Analyst: EE 5/17/2013 09:00 AM
SULFIDE, REACTIVE Sulfide, Reactive	ND		SW7.3.4.2 40.0	mg/Kg	1	Analyst: EE 5/17/2013 09:00 AM

Lab ID: 1305595-02A
Client Sample ID: 1305551-02B**Collection Date:** 5/9/2013 3:00:00 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, REACTIVE Cyanide, Reactive	ND		SW7.3.3.2 40.0	mg/Kg	1	Analyst: EE 5/17/2013 09:00 AM
SULFIDE, REACTIVE Sulfide, Reactive	ND		SW7.3.4.2 40.0	mg/Kg	1	Analyst: EE 5/17/2013 09:00 AM

Lab ID: 1305595-03A
Client Sample ID: 1305551-03B**Collection Date:** 5/9/2013 3:10:00 PM
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, REACTIVE Cyanide, Reactive	ND		SW7.3.3.2 40.0	mg/Kg	1	Analyst: EE 5/17/2013 09:00 AM
SULFIDE, REACTIVE Sulfide, Reactive	ND		SW7.3.4.2 40.0	mg/Kg	1	Analyst: EE 5/17/2013 09:00 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Work Order: 1305595
Project: 1305551

QC BATCH REPORT

Batch ID: **R120931** Instrument ID **WETCHEM** Method: **SW7.3.4.2**

MBLK	Sample ID: WBLKW1-051713-R120931					Units: mg/Kg		Analysis Date: 5/17/2013 09:00 AM		
Client ID:	Run ID: WETCHEM_130517D				SeqNo: 2322829		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Sulfide, Reactive ND 40

LCS	Sample ID: WLCSW1-051713-R120931					Units: mg/Kg		Analysis Date: 5/17/2013 09:00 AM		
Client ID:	Run ID: WETCHEM_130517D				SeqNo: 2322830		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Sulfide, Reactive 747.2 40 1075 0 69.5 60-120 0

The following samples were analyzed in this batch:

1305595-01A	1305595-02A	1305595-03A
-------------	-------------	-------------

Client: ALS Environmental
 Work Order: 1305595
 Project: 1305551

QC BATCH REPORT

Batch ID: **R120933** Instrument ID **WETCHEM** Method: **SW7.3.3.2**

MBLK	Sample ID: WBLKW1-051713-R120933					Units: mg/Kg		Analysis Date: 5/17/2013 09:00 AM		
Client ID:	Run ID: WETCHEM_130517E				SeqNo: 2322855		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Reactive ND 40

LCS	Sample ID: WLCSW1-051713-R120933					Units: mg/Kg		Analysis Date: 5/17/2013 09:00 AM		
Client ID:	Run ID: WETCHEM_130517E				SeqNo: 2322856		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Reactive 220.2 40 250 0 88.1 75-125 0

MS	Sample ID: 1305450-03C MS					Units: mg/Kg		Analysis Date: 5/17/2013 09:00 AM		
Client ID:	Run ID: WETCHEM_130517E				SeqNo: 2322859		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Reactive 234.4 40 250 0 93.8 50-150 0

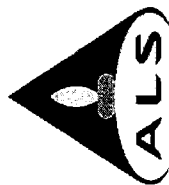
MSD	Sample ID: 1305450-03C MSD					Units: mg/Kg		Analysis Date: 5/17/2013 09:00 AM		
Client ID:	Run ID: WETCHEM_130517E				SeqNo: 2322860		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Reactive 249.1 40 250 0 99.6 50-150 234.4 6.06 35

The following samples were analyzed in this batch:

1305595-01A	1305595-02A	1305595-03A
-------------	-------------	-------------

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



Subcontractor:
ALS Laboratory Group
3352 128th Ave.
Holland, MI 49424

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

CHAIN-OF-CUSTODY RECORD

Date: 13-May-13
COC ID: 14057
Due Date: 17-May-13

Page 1 of 1

1305595

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order	Project Name	Project Number	Project ID	A	B	C	D	E	F	G	H	I	J			
Work Order	ALS Group USA, Corp.	1305551														
Company Name	ALS Group USA, Corp.	Bill To Company														
Send Report To	Sonia West	Inv Attn														
Address	10450 Stanciliff Rd, Suite 210	Address														
City/State/Zip	Houston, Texas 77099-4338	City/State/Zip														
Phone	(281) 530-5656	Phone														
Fax	(281) 530-5887	Fax														
eMail Address	Sonia.West@alsglobal.com	eMail CC														
		Jamoke.Lawal@alsglobal.com														
Sample ID	Matrix	Collection Date	24hr	Bottle	A	B	C	D	E	F	G	H	I	J		
1305551-01B (T-1210 Sand)	Solid	9/May/2013 14:50		(1) ZOZGNEAT	X	X										
1305551-02B (T-103B Sandblast Sand)	Solid	9/May/2013 15:00		(1) ZOZGNEAT	X	X										
1305551-03B (T-103B Rust & Absorbant)	Solid	9/May/2013 15:10		(1) ZOZGNEAT	X	X										

Comments:

Please analyze for Reactive Cyanide and Reactive Sulfide. Due on 5/17/2013.

FedEx

5/15/13 10:00

Relinquished by:

Date/Time

Received by:

5/15/13 10:00

Date/Time

Cooler IDs

Report/QC Level

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

4.0°C

awl

Sample Receipt Checklist

Client Name: ALS - HOUSTON

Date/Time Received: 15-May-13 10:00

Work Order: 1305595

Received by: AB

Checklist completed by M rnkf du

15-May-13

Reviewed by: E lof dh

16-May-13

eSignature

Date

eSignature

Date

Matrices: soild

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):	<u>3.8c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>5/15/2013 1:23:50 PM</u>		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☒
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
pH adjusted?	Yes ☐	No ☐	N/A ☒
pH adjusted by:			
Login Notes:			

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

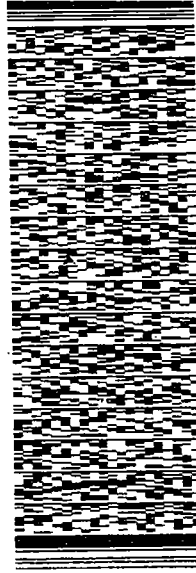
ORIGIN ID: SGR4 (281) 530-5555
SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 14MAY13
ACTWGT: 34.5 LB
CAD: 300130/CAF2608
DIMS: 28X14X14 IN
BILL SENDER

JEFF GLASER
ALS ENVIRONMENTAL
3352 128TH AVE.

HOLLAND MI 49424

(281) 530-5555
REF: (SUBCONTRACT) PMG



FedEx
EXPRESS

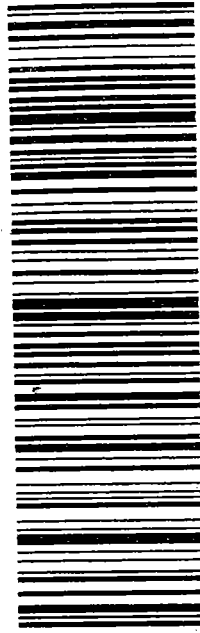
J12131210050125

TRK# 4340 2175 7083
0201

WED - 15 MAY 10:30A
PRIORITY OVERNIGHT

NA GPPA

49424
MI-US GRR



3802

Seal Broken By:

Date:

CUSTODY SEAL

Date: 5-15-13 Time: _____
Name: P. G. A.
Company: ALS (Houston)

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5655
Fax. +1 281 530 5887



Seal Broken By:

Date:

CUSTODY SEAL

Date: 5-14-13 Time: _____
Name: P. G. A.
Company: ALS (Houston)

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5655
Fax. +1 281 530 5887



Table 3. Tank 1210 Groundwater Human Health Standard Results,
Navajo Refining Company, Lovington Refinery

Analyte	NM WQCC Groundwater Standards	Tank 1210 05/01/13
Polychlorinated Biphenyls mg/L (SW8082)		
Aroclor 1016, 1221, 1232, 1242, 1248, 1254, 1260	0.001	<0.0005
Low-Level PAHs mg/L (SW8270)		
Total Naphthalenes	0.03	0.233
Naphthalene	--	<0.000105
1-Methylnaphthalene	--	0.233
2-Methylnaphthalene	--	<0.000105
Benzo(a)pyrene	0.0007	<0.000105
Volatiles mg/L (SW8260)		
1,1,1-Trichloroethane	0.06	<0.0050
1,1,2,2-Tetrachloroethane	0.01	<0.0050
1,1,2-Trichloroethane	0.01	<0.0050
1,1-Dichloroethane	0.025	<0.0050
1,1-Dichloroethene	0.005	<0.0050
1,2-Dibromoethane	0.0001	<0.0050
1,2-Dichloroethane	0.01	<0.0050
Benzene	0.01	<0.0050
Carbon tetrachloride	0.01	<0.0050
Chloroform	0.1	<0.0050
Ethylbenzene	0.75	<0.0050
Methylene chloride	0.1	<0.0100
Tetrachloroethene	0.02	<0.0050
Toluene	0.75	<0.0050
Trichloroethene	0.1	<0.0050
Vinyl Chloride	0.001	<0.0020
Xylenes, Total	0.62	<0.0150
Metals mg/L (SW6020/SW7470A)		
Aluminum	5.0	<0.0100
Arsenic	0.1	<0.0050
Barium	1.0	0.103
Boron	0.75	0.150
Cadmium	0.01	<0.0020
Chromium	0.05	<0.0050
Cobalt	0.05	<0.0050
Copper	1.0	0.0154
Iron	1.0	0.945
Lead	0.05	<0.0050
Manganese	0.2	0.0298
Mercury	0.002	<0.0002
Molybdenum	1.0	<0.0050
Nickel	0.2	<0.0050
Selenium	0.05	<0.0050
Silver	0.05	<0.0050
Uranium	0.03	<0.0050
Zinc	10.0	<0.0050

Table 3. Tank 1210 Groundwater Human Health Standard Results,
Navajo Refining Company, Lovington Refinery

Analyte		NM WQCC Groundwater Standards	Tank 1210 05/01/13
Anions mg/L (EPA 300.0)			
Chloride		250	182
Fluoride		1.6	1.17
Nitrate-Nitrite		10	2.46
Sulfate		600	86.2
Total Dissolved Solids mg/L (M2540C)			
Total Dissolved Solids		1,000	730
Radioactivity pCi/l (903.1)			
Combined Ra-226 & Ra-228		30	1.08
Cyanide mg/L (SM4500CN E)			
Cyanide		0.2	<0.0200
Phenols mg/L (EPA 420.1)			
Total Phenols		0.005	<0.0500 ⁽¹⁾
pH (SM4500H+ B)			
pH		between 6 and 9	7.24
Notes:			
(1) Laboratory reporting limit is greater than New Mexico Water Quality Control Commission (WQCC) Human Health Standard			
Bold indicates analyte was detected above the laboratory reporting limit			
Shading indicates detected result exceeded the NM WQCC Human Health Standard			
mg/L = milligrams per liter			
< = Not reported above laboratory reporting limit			
-- = Not Available			
Analyses performed by ALS Laboratory Group, Houston, Texas			

Table 4. Tank 1210 Sediment Analytical Results,
Navajo Refining Company, Lovington Refinery

Hazardous Waste Characteristic (§ 261.21-261.24) ⁽¹⁾		Tank 1210 Sediment 05/01/13
Analyte		
TCLP Semi-Volatiles mg/L (SW1311/8270)		§ 261.24 (Toxicity)
2,4,5-Trichlorophenol	400	<0.0050
2,4,6-Trichlorophenol	2.0	<0.0050
2,4-Dinitrotoluene	0.13	<0.0050
Total Cresols	200	<0.0150
Hexachlorobenzene	0.13	<0.0050
Hexachlorobutadiene	0.5	<0.0050
Hexachloroethane	3.0	<0.0050
Nitrobenzene	2.0	<0.0050
Pentachlorophenol	100	<0.0050
Pyridine	5.0	<0.0050
TCLP Volatiles mg/L (SW1311/8260B)		§ 261.24 (Toxicity)
1,1-Dichloroethene	0.7	<0.10
1,2-Dichloroethane	0.5	<0.10
1,4-Dichlorobenzene	7.5	<0.10
2-Butanone	200	<0.20
Benzene	0.5	<0.10
Carbon tetrachloride	0.5	<0.10
Chlorobenzene	100	<0.10
Chloroform	5.0	<0.10
Tetrachloroethene	0.7	<0.10
Trichloroethene	0.5	<0.10
Vinyl Chloride	0.2	<0.10
TCLP Metals mg/L (SW1311/6020)		§ 261.24 (Toxicity)
Arsenic	5.0	<0.0500
Barium	100	0.236
Cadmium	1.0	<0.0200
Chromium	5.0	<0.0500
Lead	5.0	<0.0500
Mercury	0.2	<0.0002
Selenium	1.0	<0.0500
Silver	5.0	<0.0500
Reactive Cyanide/Sulfide mg/kg (SW-846)		§ 261.23 (Reactivity)
Reactive Cyanide	NA	<0.0200
Reactive Sulfide	NA	<40.0
Ignitability (SW1030)		§ 261.21 (Ignitability)
Ignitability, Solid	NA	negative
pH (SW9045D)		§ 261.22 (Corrosivity)
pH	<2 or >12.5	7.73
Notes:		
(1) Title 40 of the Code of Federal Regulations (CFR) Part 261 Subpart C		
Bold indicates analyte was detected above the laboratory reporting limit		
TCLP = Toxicity Characteristic Leaching Procedure		
mg/L = milligrams per liter		
mg/kg = milligrams per kilogram		
< = Not reported above laboratory reporting limit		
NA = Not Applicable		
Analyses performed by ALS Laboratory Group, Houston, Texas		