GW – 028

2015 Annual Discharge Permit Report

PART 6 OF 16

March 2016

Table 7 - Summary of Groundwater Sampling Analytical Results Fourth Quarter 2013 Final Report - RO Reject Unserhäuge Fishas New york and the fishing of the star Reference Venace

| and the second of the se | | | RODucharge | er en die andere ander ander ander die s | | RO Dischar | e (continued) | | Regular Unit | Temporary Unit | Summary Statistics | 5 51 MAX 2 40 CFR 1 |
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| i cause Bio | Result Dury RL | PALIZ DUE RU | SHUT ONE SI | Result Quit 4L | Result Guat RL | READ GOD RU | Romat Qual PL | Result Quart Ru | RANUE CONF. M. | T MARKIN I SAME TO ALL | | |
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| - <u>3 60</u> F | 5.065 | U 0001 | 100 | U 3.001 | 2 2.361 U 0.391 | t u <u>0,001</u> t u <u>0,005</u> t v <u>0,005</u> | 1 . 1.0635 | S/GC 6 2 | U 1 9 503 | 5.02 | | 2 2 34 1 00 |
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| 1 1 0,020 | 1 0 1 0.005 | | 0.355 | U 0.001 | U 9.301 | U 0.001 | 0 0005 | t1 0.0005 | U 0.00 | t 0.001 | 1 0 0 0 NA | <u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u> |
| 1 0 0.002 | 10 0003 | u 0.001 | 1010/02 | 3_0_1_0,000 | | | | | NA | NA 1 | 4 0 0 0 NA | 0.03 NA 0.03 |
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| U 0,000:2 | 3 UN 0.000101 3 UN 0.000101 | U 10.0002 | 0.00030 | U 0.0012 | | | 0 0005 | U 0.0005 | 5 U 1 0 00 | U 0.091 | | |
| U 0.00010 | 3 | 1 0 1 110924 | | | | 0.0567 0.01 | F 10 1 0.1 | U 3.61 | MA U 0.5 | 0.01: 1 3 1 0 3 | 11 6 0.00529 0.0567 0.01698 | 0.2263 NA 5 |
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| | U 0.3: | 0.00/65 3 0.03 | 0.0341 0.03 | 0.00529 0.01 | | | 0.0012 0.002 | 0.001 0.001 | U 0,0 | 1 0.0015 J 0.01 | 51 7 0.001 0.00444 0.00212 | 0.285 100 |
| U 0.005 | U i 0.005 | 0.005 | U 1 0.005 | 0.0025 2 0.01 | 0.00244 2 0.005 | 0.0523 0.005 | 0.0012 0.002 0.045 0.002 | 0.001 0.001 0.001 0.001 | 0.0696 0.00 | 1 0.0015 J 0.01 8 0.072 0.025 | 11 13 0.045 0.072 0.05883 15 10 0.071 0.143 0.11(4) | 0.288 100 1 0.572 NA 0.75 |
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| y 9,005 9 0,005 0,05 0,002 | U 0,005 0,0607 0,005 0,334 0,05 U 0,002 | 0.005 0.005 0.005 0.005 | U 0.205 0.0572 0.005 0.102 0.05 U 0.052 U 0.052 | 0.0025 / 0.01 0.0464 0.005 0.104 0.1 0 0.020 397 5 U 0.02 | 0,00244 2 0.005 0,0553 0.005 0,0554 0.005 0,0014 0.000 0,00114 2 0.005 | C.00125: 2 0.005 0.0523 0.005 0.109 0.05 0.109 0.05 0.109 0.05 0.100 0.005 0.000 0.005 0.000 0.005 | 2.2012 5.202 3.245 0.022 44 6.1 5.202 45 0.021 5.202 45 0.021 5.202 4.1 5.202 4.1 5.202 0.022 4.1 5.202 0.022 4.1 5.202 0.022 4.1 5.202 0.022 4.1 5.202 0.022 5.202 0.022 0.022 5.202 0.022 5.202 0.022 0.022 5.202 0.022 0.002 0 | 2 001 0.001 0 051 0.001 6 071 0.1 U 0.002 500 1 1 U 0.002 | U 0.0 0.0695 0.03 0.116 0.1 0.05 10 665 10 0.00 | 1 0.0015 J 0.01 36 0.072 0.025 0.025 0.12 0.1 0.025 0.1 25 U 0.005 10 1 U 0.031 | 11 11 0.0=5 0.072 0.072833 11 10 0.071 0.143 0.1144 12 3 5 MA 8 8 397 810 543,21 11 2 0.021,40 0.020,12 0.021,12 11 2 0.021,14 0.020,12 0.021,12 11 0 0 0 0 | 0.285 100 1 0.572 NA 0.25 0 1 0.01 2240 NA NA 30064 5 0.05 0 NA 0.05 |
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

May 13, 2015

Scott Denton Navajo Refining Company P.O. Box 159 Artesia, NM 88211-0159 TEL: (575) 748-3311 FAX

RE: Monthly RO Reject

OrderNo.: 1504C24

Dear Scott Denton:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/29/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1504C24

Hall Environmental Analysis Laboratory, Inc.

Lab Order 1504C24 Date Reported: 5/13/2015

| CLIENT: Navajo Refining CompanyProject: Monthly RO RejectLab ID: 1504C24-001 | Matrix: | AQUEOUS | | | Date: 4/2 |). 8/2015 8:45:00 AM 9/2015 9:15:00 AM | |
|--|---------|-----------|------|-------|-----------|--|--------|
| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
| EPA METHOD 8011/504.1: EDB | | | | | | Analyst: | JME |
| 1,2-Dibromoethane | ND | 0.010 | | µg/L | 1 | 4/30/2015 5:33:16 PM | 18974 |
| EPA METHOD 8082: PCB'S | | | | | | Analyst: | SCC |
| Aroclor 1016 | ND | 1.0 | | µg/L | 1 | 5/5/2015 3:50:42 PM | 18997 |
| Aroclor 1221 | ND | 1.0 | | μg/L | 1 | 5/5/2015 3:50:42 PM | 18997 |
| Aroclor 1232 | ND | 1.0 | | μg/L | 1 | 5/5/2015 3:50:42 PM | 18997 |
| Aroclor 1242 | ND | 1.0 | | µg/L | 1 | 5/5/2015 3:50:42 PM | 18997 |
| Aroclor 1248 | ND | 1.0 | | µg/L | 1 | 5/5/2015 3:50:42 PM | 18997 |
| Aroclor 1254 | ND | 1.0 | | µg/L | 1 | 5/5/2015 3:50:42 PM | 18997 |
| Aroclor 1260 | ND | 1.0 | | µg/L | 1 | 5/5/2015 3:50:42 PM | 18997 |
| Surr: Decachlorobiphenyl | 115 | 44.5-110 | S | %REC | 1 | 5/5/2015 3:50:42 PM | 18997 |
| Surr: Tetrachloro-m-xylene | 126 | 31.8-95.7 | S | %REC | 1 | 5/5/2015 3:50:42 PM | 18997 |
| EPA METHOD 8015D: DIESEL RANGE | | | | | | Analyst: | KJH |
| Diesel Range Organics (DRO) | ND | 1.0 | | mg/L | 1 | 4/29/2015 4:57:42 PM | 18947 |
| Motor Oil Range Organics (MRO) | ND | 5.0 | | mg/L | 1 | 4/29/2015 4:57:42 PM | 18947 |
| Surr: DNOP | 113 | 76.5-150 | | %REC | 1 | 4/29/2015 4:57:42 PM | 18947 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | Analyst: | NSB |
| Gasoline Range Organics (GRO) | ND | 0.050 | | mg/L | 1 | 5/4/2015 4:01:53 PM | R25939 |
| Surr: BFB | 87.5 | 80-120 | | %REC | 1 | 5/4/2015 4:01:53 PM | R25939 |
| EPA METHOD 8310: PAHS | | | | | | Analyst: | SCC |
| Naphthalene | ND | 2.0 | | µg/L | 1 | 5/5/2015 11:32:18 AM | 18998 |
| 1-Methylnaphthalene | ND | 2.0 | | µg/L | 1 | 5/5/2015 11:32:18 AM | 18998 |
| 2-Methylnaphthalene | ND | 2.0 | | µg/L | 1 | 5/5/2015 11:32:18 AM | 18998 |
| Benzo(a)pyrene | ND | 0.070 | | µg/L | 1 | 5/5/2015 11:32:18 AM | 18998 |
| Surr: Benzo(e)pyrene | 81.0 | 30.8-125 | | %REC | 1 | 5/5/2015 11:32:18 AM | 18998 |
| EPA METHOD 300.0: ANIONS | | | | | | Analyst: | LGT |
| Fluoride | 2.2 | 0.10 | | mg/L | 1 | 4/29/2015 3:25:23 PM | R25872 |
| Chloride | 37 | 10 | | mg/L | 20 | 4/29/2015 4:02:38 PM | R25872 |
| Nitrogen, Nitrate (As N) | 1.1 | 0.10 | | mg/L | 1 | 4/29/2015 3:25:23 PM | R25872 |
| Sulfate | 1100 | 25 | | mg/L | 50 | 5/6/2015 12:59:46 AM | R25994 |
| EPA METHOD 200.7: DISSOLVED METAL | S | | | | | Analyst: | JLF |
| Aluminum | ND | 0.020 | | mg/L | 1 | 4/29/2015 6:14:42 PM | R25851 |
| Barium | 0.041 | 0.0020 | | mg/L | 1 | 4/29/2015 6:14:42 PM | R25851 |
| Boron | 0.089 | 0.040 | | mg/L | 1 | 4/29/2015 6:14:42 PM | R25851 |
| Cadmium | ND | 0.0020 | | mg/L | 1 | 4/30/2015 1:05:27 PM | R25881 |
| Chromium | ND | 0.0060 | | mg/L | 1 | 4/29/2015 6:14:42 PM | R25851 |
| Cobalt | ND | 0.0060 | | mg/L | 1 | 4/29/2015 6:14:42 PM | R25851 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers: * Value exceeds Maximum Contaminant Level.

- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 1 of 20
- P Sample pH Not In Range
- RL Reporting Detection Limit

Analytical Report Lab Order 1504C24

Date Reported: 5/13/2015

Analyst: SCC

| CLIENT: Navajo Refining CompanyProject: Monthly RO RejectLab ID: 1504C24-001 | Client Sample ID: R.O. Collection Date: 4/28/2015 8:45:00 AM Matrix: AQUEOUS Received Date: 4/29/2015 9:15:00 AM | | | | | | | |
|--|--|---------|-----------|----------------|----------------------|--------------|--|--|
| Analyses | Result | | ual Units | and the second | Date Analyzed | Batch | | |
| EPA METHOD 200.7: DISSOLVED ME | TALS | | | | Analyst | Analyst: JLF | | |
| Copper | ND | 0.0060 | mg/L | 1 | 4/29/2015 6:14:42 PM | R25851 | | |
| Iron | ND | 0.020 | mg/L | 1 | 4/29/2015 6:14:42 PM | R25851 | | |
| Manganese | ND | 0.0020 | mg/L | 1 | 4/29/2015 6:14:42 PM | R2585 | | |
| Molybdenum | ND | 0.0080 | mg/L | 1 | 4/30/2015 1:05:27 PM | R2588 | | |
| Nickel | ND | 0.010 | mg/L | 1 | 4/29/2015 6:14:42 PM | R2585 | | |
| Silver | ND | 0.0050 | mg/L | 1 | 4/30/2015 1:05:27 PM | R25881 | | |
| Zinc | 0.075 | 0.010 | mg/L | 1 | 4/29/2015 6:14:42 PM | R25851 | | |
| EPA 200.8: DISSOLVED METALS | | | ····9· – | | Analyst | | | |
| Arsenic | ND | 0.0050 | mg/L | 5 | 5/7/2015 2:35:40 PM | R26042 | | |
| Lead | ND | 0.0010 | mg/L | 1 | 5/5/2015 11:04:05 AM | R25950 | | |
| Selenium | 0.0053 | 0.0010 | mg/L | 1 | 5/5/2015 11:04:05 AM | R25950 | | |
| Uranium | 0.0042 | 0.0010 | mg/L | 1 | 5/5/2015 11:04:05 AM | R25950 | | |
| EPA METHOD 245.1: MERCURY | 0.0042 | 0.0010 | ing/L | | Analyst | | | |
| Mercury | ND | 0.00020 | mg/L | 1 | 5/4/2015 2:01:49 PM | 18982 | | |
| EPA METHOD 8260B: VOLATILES | | | 5 | | Analyst | : cada | | |
| Benzene | ND | 1.0 | µg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Toluene | ND | 1.0 | μg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Ethylbenzene | ND | 1.0 | μg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| 1,2-Dichloroethane (EDC) | ND | 1.0 | μg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| 1,2-Dibromoethane (EDB) | ND | 1.0 | μg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Carbon Tetrachloride | ND | 1.0 | µg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Chloroform | ND | 1.0 | μg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| 1,1-Dichloroethane | ND | 1.0 | μg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| 1,1-Dichloroethene | ND | 1.0 | µg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Methylene Chloride | ND | 3.0 | μg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| 1,1,2,2-Tetrachloroethane | ND | 2.0 | µg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Tetrachloroethene (PCE) | ND | 1.0 | µg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| 1,1,1-Trichloroethane | ND | 1.0 | µg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| 1,1,2-Trichloroethane | ND | 1.0 | µg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Trichloroethene (TCE) | ND | 1.0 | µg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Vinyl chloride | ND | 1.0 | μg/L | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Xylenes, Total | ND | 1.5 | μg/L | 1 | 4/29/2015 6:01:15 PM | R2586 | | |
| Surr: 1,2-Dichloroethane-d4 | 89.8 | 70-130 | %REC | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Surr: 4-Bromofluorobenzene | 99.8 | 70-130 | %REC | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Surr: Dibromofluoromethane | 92.8 | 70-130 | %REC | 1 | 4/29/2015 6:01:15 PM | R25860 | | |
| Surr: Toluene-d8 | 103 | 70-130 | %REC | 1 | 4/29/2015 6:01:15 PM | R25860 | | |

Hall Environmental Analysis Laboratory, Inc.

TOTAL PHENOLICS BY SW-846 9067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | В | Analyte detected in the associated Method Blank | | | |
|-------------|---|---|----|---|---------------|--|--|
| | Е | Value above quantitation range | н | Holding times for preparation or analysi | s exceeded | | |
| | J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit | Page 2 of 20 | | |
| | 0 | RSD is greater than RSDlimit | Р | Sample pH Not In Range | 1 age 2 01 20 | | |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit | | | |
| | S | Spike Recovery outside accepted recovery limits | | | | | |

Analytical Report Lab Order 1504C24 Date Reported: 5/13/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company Project: Monthly RO Reject

Client Sample ID: R.O. Collection Date: 4/28/2015 8:45:00 AM

| Lab ID: 1504C24-001 | Matrix: | AQUEOUS | s R | eceived I | Date: 4/2 | 29/2015 9:15:00 AM | |
|--------------------------------|---------|---------|--------|-----------|-----------|---------------------|--------|
| Analyses | Result | RL (| Qual U | nits | DF | Date Analyzed | Batch |
| TOTAL PHENOLICS BY SW-846 906 | 7 | | | | | Analyst | SCC |
| Phenolics, Total Recoverable | ND | 2.5 | Ч | g/L | 1 | 4/30/2015 | 18972 |
| EPA 335.4: TOTAL CYANIDE SUBBE | D | | | | | Analyst | SUB |
| Cyanide | ND | 0.0100 | n | ng/L | 1 | 5/5/2015 | R26153 |
| SM4500-H+B: PH | | | | | | Analyst | JRR |
| pН | 8.09 | 1.68 | н р | H units | 1 | 5/5/2015 5:57:25 PM | R25990 |
| SM2540C MOD: TOTAL DISSOLVED | SOLIDS | | | | | Analyst | KS |
| Total Dissolved Solids | 2190 | 20.0 | * m | ng/L | 1 | 5/1/2015 3:30:00 PM | 18979 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | в | Analyte detected in the associated Meth | od Blank |
|-------------|---|---|----|--|---------------|
| | E | Value above quantitation range | н | Holding times for preparation or analyst | is exceeded |
| | J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit | Page 3 of 20 |
| | 0 | RSD is greater than RSDlimit | Р | Sample pH Not In Range | 1 age 5 01 20 |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit | |
| | S | Spike Recovery outside accepted recovery limits | | | |

Analytical Report Lab Order 1504C24 Date Reported: 5/13/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

1504C24-002

Project: Monthly RO Reject

Lab ID:

Client Sample ID: Trip Blank Collection Date:

Matrix: TRIP BLANK Received Date: 4/29/2015 9:15:00 AM

| Analyses | Result | RL Qu | al Units | DF | Date Analyzed | Batch |
|-----------------------------|--------|--------------|----------|-------|----------------------|--------|
| EPA METHOD 8011/504.1: EDB | | Analyst: JME | | : JME | | |
| 1,2-Dibromoethane | ND | 0.010 | µg/L | 1 | 4/30/2015 5:46:54 PM | 18974 |
| EPA METHOD 8260B: VOLATILES | | | | | Analyst | : cadg |
| Benzene | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Toluene | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Ethylbenzene | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| 1,2-Dichloroethane (EDC) | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| 1,2-Dibromoethane (EDB) | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Carbon Tetrachloride | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Chloroform | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| 1,1-Dichloroethane | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| 1,1-Dichloroethene | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Methylene Chloride | ND | 3.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| 1,1,2,2-Tetrachloroethane | ND | 2.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Tetrachloroethene (PCE) | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| 1,1,1-Trichloroethane | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| 1,1,2-Trichloroethane | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Trichloroethene (TCE) | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Vinyl chloride | ND | 1.0 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Xylenes, Total | ND | 1.5 | µg/L | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Surr: 1,2-Dichloroethane-d4 | 94.6 | 70-130 | %REC | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Surr: 4-Bromofluorobenzene | 104 | 70-130 | %REC | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Surr: Dibromofluoromethane | 99.0 | 70-130 | %REC | 1 | 4/29/2015 6:29:57 PM | R25860 |
| Surr: Toluene-d8 | 98.0 | 70-130 | %REC | 1 | 4/29/2015 6:29:57 PM | R25860 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | В | Analyte detected in the associated Meth | od Blank |
|-------------|---|---|----|--|---------------|
| | Е | Value above quantitation range | н | Holding times for preparation or analyst | is exceeded |
| | J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit | Page 4 of 20 |
| | 0 | RSD is greater than RSDlimit | Р | Sample pH Not In Range | 1 age 4 01 20 |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit | |
| | S | Spike Recovery outside accepted recovery limits | | | |



ANALYTICAL RESULTS - RADIOCHEMISTRY

| Project: Pace Project No.: | 1504C24 30147057 | | | | | | |
|-------------------------------|---------------------|----------------------------|--|-----------|----------------|---------------|------|
| Sample: 1504C24- PWS: | 001H R.O. | Lab ID: 301470 Site ID: | 057001 Collected: 04/28/15 08:45 Sample Type: | Received: | 05/01/15 09:35 | Matrix: Water | |
| Parame | ters | Method | Act ± Unc (MDC) Carr Trac | Units | Analyzed | CAS No. | Qual |
| Radium-226 | | EPA 903.1 | 1.75 ± 0.849 (0.976) C:NA T:60% | pCi/L | 05/13/15 10:06 | 3 13982-63-3 | |
| Radium-228 | | EPA 904.0 | 0.398 ± 0.412 (0.851) C:72% T:77% | pCi/L | 05/11/15 17:31 | 15262-20-1 | |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

| Project: | 1504C24 | | | | | | |
|-------------------|----------------|---------------|-----------------------|-------------|----------------|------------|--|
| Pace Project No.: | 30147057 | | | | | | |
| QC Batch: | RADC/24384 | | Analysis Method: | EPA 904.0 | | | |
| QC Batch Method: | EPA 904.0 | | Analysis Description: | 904.0 Radiu | m 228 | | |
| Associated Lab Sa | mples: 3014705 | 7001 | | | | | |
| METHOD BLANK: | 890250 | | Matrix: Water | | | | |
| Associated Lab Sa | mples: 3014705 | 7001 | | | | | |
| Para | meter | Act ± U | Inc (MDC) Carr Trac | Units | Analyzed | Qualifiers | |
| Radium-228 | | 0.437 ± 0.426 | (0.869) C:70% T:70% | pCi/L | 05/11/15 17:33 | | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

| Project: | 1504C24 | | | | | | |
|--------------------|------------------|--------------|-----------------------|-----------|------------------|------------|--|
| Pace Project No.: | 30147057 | | | | | | |
| QC Batch: | RADC/24322 | | Analysis Method: | EPA 903.1 | | | |
| QC Batch Method: | EPA 903.1 | | Analysis Description: | | 903.1 Radium-226 | | |
| Associated Lab Sam | nples: 301470570 | 01 | | | | | |
| METHOD BLANK: | 888781 | | Matrix: Water | | | | |
| Associated Lab Sam | nples: 301470570 | 01 | | | | | |
| Param | neter | Act ± 0 | Inc (MDC) Carr Trac | Units | Analyzed | Qualifiers | |
| Radium-226 | | .256 ± 0.438 | (0.767) C:NA T:98% | pCi/L | 05/13/15 09:55 | | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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| WO#: | 1504C24 |
|------|-----------|
| | 13-May-15 |

| Client: Project: | | Navajo Refining C Monthly RO Rejec | | | | | | | | | | | | |
|---------------------|-----|---------------------------------------|-----------|-----------|-------------|--|-----------|---------------|-----------|----------|------|--|--|--|
| Sample ID M | В | Samp | Type: ME | BLK | Tes | TestCode: EPA Method 200.7: Dissolved Metals | | | | | | | | |
| Client ID: PE | BW | Bate | h ID: R2 | 5851 | F | RunNo: 2 | 5851 | | | | | | | |
| Prep Date: | | Analysis | Date: 4/ | 29/2015 | S | SeqNo: 7 | 66029 | Units: mg/L | | | | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | | | |
| Aluminum | | ND | 0.020 | | | | | | | | | | | |
| Barium | | ND | 0.0020 | | | | | | | | | | | |
| Boron | | ND | 0.040 | | | | | | | | | | | |
| Chromium | | ND | 0.0060 | | | | | | | | | | | |
| Cobalt | | ND | 0.0060 | | | | | | | | | | | |
| Copper | | ND | 0.0060 | | | | | | | | | | | |
| ron | | ND | 0.020 | | | | | | | | | | | |
| Manganese | | ND | 0.0020 | | | | | | | | | | | |
| Nickel | | ND | 0.010 | | | | | | | | | | | |
| Zinc | | ND | 0.010 | | | | | | | | | | | |
| Sample ID LC | s | Samp | Type: LC | S | Tes | tCode: E | PA Method | 200.7: Dissol | ved Metal | s | | | | |
| Client ID: LC | csw | Bate | h ID: R2 | 5851 | F | RunNo: 2 | 5851 | | | | | | | |
| Prep Date: | | Analysis | Date: 4/ | 29/2015 | S | SeqNo: 7 | 66030 | Units: mg/L | | | | | | |
| Analyte | | Result | PQL | | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | | | |
| Aluminum | | 0.51 | 0.020 | 0.5000 | 0 | 103 | 85 | 115 | | | | | | |
| Barium | | 0.47 | 0.0020 | 0.5000 | 0 | 93.0 | 85 | 115 | | | | | | |
| Boron | | 0.49 | 0.040 | 0.5000 | 0 | 97.9 | 85 | 115 | | | | | | |
| Chromium | | 0.48 | 0.0060 | 0.5000 | 0 | 95.5 | 85 | 115 | | | | | | |
| Cobalt | | 0.47 | 0.0060 | 0.5000 | 0 | 94.4 | 85 | 115 | | | | | | |
| Copper | | 0.47 | 0.0060 | 0.5000 | 0 | 94.3 | 85 | 115 | | | | | | |
| ron | | 0.47 | 0.020 | 0.5000 | 0 | 94.6 | 85 | 115 | | | | | | |
| Manganese | | 0.44 | 0.0020 | 0.5000 | 0 | 88.9 | 85 | 115 | | | | | | |
| Nickel | | 0.48 | 0.010 | 0.5000 | 0 | 96.6 | 85 | 115 | | | | | | |
| Zinc | | 0.48 | 0.010 | 0.5000 | 0 | 95.6 | 85 | 115 | | | | | | |
| Sample ID M | в | Samp | Type: ME | BLK | Tes | tCode: E | PA Method | 200.7: Dissol | ved Metal | s | | | | |
| Client ID: PE | зw | Bate | ch ID: R2 | 5881 | F | RunNo: 2 | 5881 | | | | | | | |
| Prep Date: | | Analysis | Date: 4/ | 30/2015 | S | SeqNo: 7 | 67040 | Units: mg/L | | | | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | | | |
| Cadmium | | ND | 0.0020 | | | | | | | | | | | |
| Molybdenum | | ND | 0.0080 | | | | | | | | | | | |
| Silver | | ND | 0.0050 | | | | | | | | | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

- Page 5 of 20

| WO#: | 1504C24 |
|------|-----------|
| | 13-May-15 |

| Client: Project: | Navajo Refining C Monthly RO Rejec | | | | | | | | | | | |
|---------------------|---------------------------------------|----------------------|-----------|--|---------|----------|-------------|------|----------|------|--|--|
| Sample ID LCS | Samp | Type: LC | s | TestCode: EPA Method 200.7: Dissolved Metals | | | | | | | | |
| Client ID: LCSV | LCSW Batch ID: R25881 | | | F | unNo: 2 | 5881 | | | | | | |
| Prep Date: | Analysis | ysis Date: 4/30/2015 | | S | eqNo: 7 | 67041 | Units: mg/L | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | | |
| Cadmium | 0.51 | 0.0020 | 0.5000 | 0 | 103 | 85 | 115 | | | | | |
| Molybdenum | 0.49 | 0.0080 | 0.5000 | 0 | 97.4 | 85 | 115 | | | | | |
| Silver | 0.088 | 0.0050 | 0.1000 | 0 | 87.9 | 85 | 115 | | | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - P Sample pH Not In Range
 - RL Reporting Detection Limit

Page 6 of 20

ND

0.0010

Navajo Refining Company

| Project: | | Monthly RO Reject | - · | 0 | | | | | | | |
|-------------------------|-------|-------------------|-------------------------|-----------|-------------|---|-------------|------------------|------|----------|------|
| Sample ID Client ID: | | | ype: LC | | | TestCode: EPA 200.8: Dissolved Metals RunNo: 25950 | | | | | |
| Prep Date: | 20011 | Analysis D | | | | eqNo: 7 | | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Lead | | 0.024 | 0.0010 | 0.02500 | 0 | 96.4 | 85 | 115 | | | |
| Selenium | | 0.024 | 0.0010 | 0.02500 | 0 | 94.9 | 85 | 115 | | | |
| Uranium | | 0.025 | 0.0010 | 0.02500 | 0 | 98.7 | 85 | 115 | | | |
| Sample ID | MB | SampT | ype: M | BLK | Test | Code: El | PA 200.8: D | Dissolved Me | tals | | |
| Client ID: | PBW | Batch | Batch ID: R25950 | | | unNo: 2 | 5950 | | | | |
| Prep Date: | | Analysis D | Analysis Date: 5/5/2015 | | | SeqNo: 769415 Units: mg/L | | | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Lead | | ND | 0.0010 | | | | | | | | |
| Selenium | | ND | 0.0010 | | | | | | | | |
| Uranium | | ND | 0.0010 | | | | | | | | |
| Sample ID | LCS | SampT | ype: LC | s | Test | Code: El | PA 200.8: D | Dissolved Me | tals | | |
| Client ID: | LCSW | Batch | n ID: R2 | 6042 | R | unNo: 2 | 6042 | | | | |
| Prep Date: | | Analysis D | ate: 5 | 7/2015 | S | eqNo: 7 | 72040 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Arsenic | | 0.024 | 0.0010 | 0.02500 | 0 | 97.4 | 85 | <mark>115</mark> | | | |
| Sample ID | MB | SampT | ype: MI | BLK | Test | Code: El | PA 200.8: E | Dissolved Me | tals | | |
| Client ID: | PBW | Batcl | DID: R2 | 6042 | R | unNo: 2 | 6042 | | | | |
| Prep Date: | | Analysis D | ate: 5 | 7/2015 | S | eqNo: 7 | 72041 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

Arsenic

Client:

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - P Sample pH Not In Range
 - RL Reporting Detection Limit

Page 7 of 20

1504C24 13-May-15

WO#:

| WO#: | 1504C24 |
|------|-----------|
| | 13-May-15 |

| Client: Project: | 1960 B | jo Refining Company thly RO Reject | | | | | | | | |
|---------------------|-----------|---------------------------------------|--------------------|-------------------------------------|--------------|------|----------|------|--|--|
| Sample ID | MB-18982 | SampType: MBLK | TestCode: | TestCode: EPA Method 245.1: Mercury | | | | | | |
| Client ID: | PBW | Batch ID: 18982 | RunNo: | RunNo: 25930 | | | | | | |
| Prep Date: | 4/30/2015 | Analysis Date: 5/4/2015 | SeqNo | 768647 | Units: mg/L | | | | | |
| Analyte | | Result PQL SPK val | ue SPK Ref Val %RE | C LowLimit | HighLimit | %RPD | RPDLimit | Qual | | |
| Mercury | | ND 0.00020 | | | | | | | | |
| Sample ID | LCS-18982 | SampType: LCS | TestCode: | EPA Method | 245.1: Mercu | ry | | | | |
| Client ID: | LCSW | Batch ID: 18982 | RunNo | 25930 | | | | | | |
| Prep Date: | 4/30/2015 | Analysis Date: 5/4/2015 | SeqNo | 768648 | Units: mg/L | | | | | |
| Analyte | | Result PQL SPK val | ue SPK Ref Val %RE | C LowLimit | HighLimit | %RPD | RPDLimit | Qual | | |
| Mercury | | 0.0051 0.00020 0.0050 | 00 0 10 | 80 | 120 | | | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

Page 8 of 20

| Client: | Navajo Refining C | ompany | | | | | | | | | |
|--------------------------------|-------------------|----------|-----------|-------------|------------------------------------|-----------|---------------------------------|-------|----------------------------|------|--|
| Project: | Monthly RO Reject | t | | | | | | | | | |
| | | | | | | | | | | | |
| Sample ID MB | Samp | Type: MI | BLK | Tes | TestCode: EPA Method 300.0: Anions | | | | | | |
| Client ID: PBW | Bato | h ID: R2 | 5872 | F | RunNo: 25872 | | | | | | |
| Prep Date: | Analysis | Date: 4 | 29/2015 | S | SeqNo: 7 | 66806 | Units: mg/L | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Fluoride | ND | 0.10 | | | | | - | | | | |
| Chloride | ND | 0.50 | | | | | | | | | |
| Nitrogen, Nitrate (As N) | ND | 0.10 | | | | | | | | | |
| Sample ID LCS | Samp | Type: LC | s | Tes | tCode: El | PA Method | 300.0: Anion: | s | | | |
| Client ID: LCSW | Bato | h ID: R2 | 25872 | F | RunNo: 2 | 5872 | | | | | |
| Prep Date: | Analysis | Date: 4 | 29/2015 | S | SeqNo: 7 | 66807 | Units: mg/L | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Fluoride | 0.46 | 0.10 | 0.5000 | 0 | 92.4 | 90 | 110 | | 2008 - Contra De 1972 - Sa | | |
| Chloride | 4.5 | 0.50 | 5.000 | 0 | 91.0 | 90 | 110 | | | | |
| Nitrogen, Nitrate (As N) | 2.4 | 0.10 | 2.500 | 0 | 96.2 | 90 | 110 | | | | |
| Sample ID 1504C2 | 24-001EMS Samp | Type: M | 5 | Tes | tCode: El | PA Method | 300.0: Anion | s | | | |
| Client ID: R.O. | Bato | h ID: R2 | 5872 | F | RunNo: 2 | 5872 | | | | | |
| Prep Date: | Analysis | Date: 4 | 29/2015 | S | SeqNo: 7 | 66822 | Units: mg/L | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Fluoride | 2.5 | 0.10 | 0.5000 | 2.238 | 55.2 | 66.1 | 113 | | | S | |
| Nitrogen, Nitrate (As N) | 3.3 | 0.10 | 2.500 | 1.147 | 86.1 | 84 | 109 | | | | |
| Sample ID 1504C2 | 24-001EMSD Samp | Type: M | SD | Tes | tCode: El | PA Method | 300.0: Anion | s | | | |
| Client ID: R.O. | | h ID: R2 | | | RunNo: 2 | | | | | | |
| Prep Date: | Analysis | Date: 4 | 29/2015 | s | SeqNo: 7 | 66823 | Units: mg/L | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Fluoride | 2.4 | 0.10 | 0.5000 | 2.238 | 30.4 | 66.1 | 113 | 5.06 | 20 | S | |
| Nitrogen, Nitrate (As N) | 3.3 | 0.10 | 2.500 | 1.147 | 86.6 | 84 | 109 | 0.363 | 20 | | |
| | | Type: MI | BLK | Tes | tCode: E | PA Method | 300.0: Anion | s | | | |
| Sample ID MB | Samp | ypc. | | | | | | | | | |
| Sample ID MB Client ID: PBW | | h ID: R2 | 5994 | F | RunNo: 2 | 5994 | | | | | |
| | | h ID: R2 | | | RunNo: 2 SeqNo: 7 | | Units: mg/L | | | | |
| Client ID: PBW | Bato | h ID: R2 | 5/2015 | | | | Units: mg/L HighLimit | %RPD | RPDLimit | Qual | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - **Reporting Detection Limit** RL

Page 9 of 20

WO#: 1504C24

| WO#: | 1504C24 |
|------|-----------|
| | 13-May-15 |

| Client: Project: | Navajo Refining Con Monthly RO Reject | mpany | | | | | | | | |
|---------------------|--|------------------------------------|-----------|-------------|---------------|----------|-----------|------|----------|------|
| Sample ID LCS | SampTy | TestCode: EPA Method 300.0: Anions | | | | | | | | |
| Client ID: LCSW | W Batch ID: R25994 | | R | unNo: 2 | 5994 | | | | | |
| Prep Date: | Analysis Da | Analysis Date: 5/5/2015 | | S | SeqNo: 770621 | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Sulfate | 9.7 | 0.50 | 10.00 | 0 | 97.2 | 90 | 110 | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - P Sample pH Not In Range
 - RL Reporting Detection Limit

Page 10 of 20

1 450 10 01 20

| WO#: | 1504C24 |
|------|-----------|
| | 13-May-15 |

| Client: Project: | | o Refining Co nly RO Reject | | | | | | | | | |
|---------------------|---|--------------------------------|---------|--------------------------------------|--------------|----------|-----------|---------------|------|----------|------|
| Sample ID | MB-18974 SampType: MBLK PBW Batch ID: 18974 | | | TestCode: EPA Method 8011/504.1: EDB | | | | | | | |
| Client ID: | PBW Batch ID: 18974 | | | 974 | RunNo: 25898 | | | | | | |
| Prep Date: | 4/30/2015 | Analysis D | ate: 4/ | 30/2015 | 5 | SeqNo: 7 | 67691 | Units: µg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 1,2-Dibromoeth | ane | ND | 0.010 | | | | | | | | |
| Sample ID | LCS-18974 | SampT | ype: LC | s | Tes | tCode: E | PA Method | 8011/504.1: E | DB | | |
| Client ID: | LCSW | Batch | 1D: 18 | 974 | RunNo: 25898 | | | | | | |
| Prep Date: | 4/30/2015 | Analysis D | ate: 4/ | 30/2015 | 9 | SeqNo: 7 | 67692 | Units: µg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 1,2-Dibromoeth | ane | 0.11 | 0.010 | 0.1000 | 0 | 114 | 70 | 130 | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

Page 11 of 20

Navajo Refining Company

| 13-May-15 |
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| |
| |

| Sample ID MB-18947 | Samp | Type: ME | BLK | Tes | tCode: El | PA Method | 8015D: Diese | Range | | |
|--------------------------------|------------|----------|-----------|-------------|-----------|-----------|--------------|-------|----------|------|
| Client ID: PBW | Batc | h ID: 18 | 947 | F | unNo: 2 | 5835 | | | | |
| Prep Date: 4/29/2015 | Analysis [| Date: 4/ | 29/2015 | S | eqNo: 7 | 66304 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 1.0 | | | | | | | | |
| Motor Oil Range Organics (MRO) | ND | 5.0 | | | | | | | | |
| Surr: DNOP | 1.1 | | 1.000 | | 109 | 76.5 | 150 | | | |
| Sample ID LCS-18947 | Samp | Type: LC | s | Tes | tCode: El | PA Method | 8015D: Diese | Range | | |
| Client ID: LCSW | Batc | h ID: 18 | 947 | F | unNo: 2 | 5835 | | | | |
| Prep Date: 4/29/2015 | Analysis [| Date: 4/ | 29/2015 | 5 | eqNo: 7 | 66305 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 5.2 | 1.0 | 5.000 | 0 | 104 | 60.1 | 156 | | | |
| | | | | | | | | | | |

Qualifiers:

Client:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

Page 12 of 20

WO#:

| WO#: | 1504C24 |
|------|---------|
| | |

13-May-15

| | vajo Refining Co onthly RO Rejec | | | | | | | | | |
|-----------------------------|-------------------------------------|----------|-----------|-------------|--------------------|-----------|-------------|-----------|----------|------|
| Sample ID 5ML RB | Samp | Type: ME | BLK | Tes | tCode: El | PA Method | 8015D: Gaso | line Rang | e | |
| Client ID: PBW | Batc | h ID: R2 | 5939 | F | RunNo: 2 | 5939 | | | | |
| Prep Date: | Analysis [| Date: 5/ | 4/2015 | S | SeqNo: 7 | 68862 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GF | RO) ND | 0.050 | | | | | | | | |
| Surr: BFB | 18 | | 20.00 | | 88. <mark>4</mark> | 80 | 120 | | | |
| Sample ID 2.5UG GRC | LCS Samp | Type: LC | s | Tes | tCode: El | PA Method | 8015D: Gaso | line Rang | e | |
| Client ID: LCSW | Batc | h ID: R2 | 5939 | F | RunNo: 2 | 5939 | | | | |
| Prep Date: | Analysis [| Date: 5/ | 4/2015 | S | SeqNo: 7 | 68863 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GF | RO) 0.46 | 0.050 | 0.5000 | 0 | 92.2 | 80 | 120 | | | |
| Surr: BFB | 18 | | 20.00 | | 91.1 | 80 | 120 | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

| QC SUMMARY Hall Environmen | | | aborat | ory, Inc. | | | | | WO#: | 1504C24 13-May-15 |
|--|----------------------------|---------|-----------|-------------|----------|-----------|-------------|------|----------|----------------------|
| and the second | Refining Co y RO Reject | · · | | | | | | | | |
| Sample ID MB-18997 | SampTy | ype: ME | BLK | Tes | tCode: E | PA Method | 8082: PCB's | | | |
| Client ID: PBW | Batch | ID: 18 | 997 | F | RunNo: 2 | 5944 | | | | |
| Prep Date: 5/1/2015 | Analysis Da | ate: 5/ | 5/2015 | 5 | SeqNo: 7 | 69049 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aroclor 1016 | ND | 1.0 | | | | | | | | 50 1 |
| Aroclor 1221 | ND | 1.0 | | | | | | | | |
| Aroclor 1232 | ND | 1.0 | | | | | | | | |
| Aroclor 1242 | ND | 1.0 | | | | | | | | |
| Aroclor 1248 | ND | 1.0 | | | | | | | | |
| Aroclor 1254 | ND | 1.0 | | | | | | | | |
| Aroclor 1260 | ND | 1.0 | | | | | | | | |
| Surr: Decachlorobiphenyl | 2.2 | | 2.500 | | 87.2 | 44.5 | 110 | | | |
| Surr: Tetrachloro-m-xylene | 2.4 | | 2.500 | | 97.6 | 31.8 | 95.7 | | | S |
| Sample ID LCS-18997 | SampTy | ype: LC | S | Tes | tCode: E | PA Method | 8082: PCB's | | | |
| Client ID: LCSW | Batch | ID: 18 | 997 | F | RunNo: 2 | 5944 | | | | |
| Prep Date: 5/1/2015 | Analysis Da | ate: 5/ | 5/2015 | 5 | SeqNo: 7 | 69942 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aroclor 1016 | 4.9 | 1.0 | 5.000 | 0 | 98.7 | 22.6 | 127 | | | |
| Aroclor 1260 | 5.1 | 1.0 | 5.000 | 0 | 102 | 20.4 | 122 | | | |
| Surr: Decachlorobiphenyl | 2.9 | | 2.500 | | 114 | 44.5 | 110 | | | S |
| Surr: Tetrachloro-m-xylene | 4.2 | | 2.500 | | 169 | 31.8 | 95.7 | | | S |
| Sample ID LCSD-18997 | SampTy | ype: LC | SD | Tes | tCode: E | PA Method | 8082: PCB's | | | |
| Client ID: LCSS02 | Batch | ID: 18 | 997 | F | RunNo: 2 | 5944 | | | | |
| Prep Date: 5/1/2015 | Analysis Da | ate: 5/ | 5/2015 | 5 | SeqNo: 7 | 69944 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aroclor 1016 | 4.6 | 1.0 | 5.000 | 0 | 93.0 | 22.6 | 127 | 6.03 | 26.9 | |
| Aroclor 1260 | 5.3 | 1.0 | 5.000 | 0 | 107 | 20.4 | 122 | 4.45 | 29.1 | |
| Surr: Decachlorobiphenyl | 3.0 | | 2.500 | | 118 | 44.5 | 110 | 0 | 0 | S |
| | | | | | | | | 023 | | |

2.500

3.8

Qualifiers:

* Value exceeds Maximum Contaminant Level.

QC SUMMARY REPORT

E Value above quantitation range

Surr: Tetrachloro-m-xylene

- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank

150

31.8

95.7

0

- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

Page 14 of 20

0

S

| WO#: | 1504C24 |
|------|-----------|
| | 13-May-15 |

| Client: | Navajo Refining Company |
|-----------------|-------------------------|
| Project: | Monthly RO Reject |

| SampT | VDE: LC | s | Test | Code: FI | PA Method | 8260B: VOI | ATILES | | |
|---------------------------------|---|---|---|--|---|---|---|--|---|
| | | | | | | | | | |
| | | | | | | Units: un/ | | | |
| Analysis D | ale. 4/ | 29/2015 | 3 | equito. A | 00334 | | | | |
| Result | PQL | 2000-0018-0012000018-2 | CONTRACTOR STRATEGY AND ADDRESS | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| | 1.0 | | | | 70 | 130 | | | |
| 20 | 1.0 | 20.00 | 0 | 98.9 | | 130 | | | |
| 22 | 1.0 | 20.00 | 0 | 108 | 75.6 | 144 | | | |
| 20 | 1.0 | 20.00 | 0 | 98.3 | 70 | 130 | | | |
| 9.9 | | 10.00 | | 98.9 | 70 | 130 | | | |
| 10 | | 10.00 | | 103 | 70 | 130 | | | |
| 10 | | 10.00 | | 103 | 70 | 130 | | | |
| 10 | | 10.00 | | 101 | 70 | 130 | | | |
| Sample ID 5mL rb SampType: MBLK | | | Test | tCode: El | PA Method | 8260B: VOL | ATILES | | |
| Batch | ID: R2 | 5860 | R | unNo: 2 | 5860 | | | | |
| Analysis D | ate: 4/ | 29/2015 | S | eqNo: 7 | 66361 | Units: µg/L | | | |
| Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| ND | 1.0 | | | | | | | | |
| ND | 1.0 | | | | | | | | |
| ND | 1.0 | | | | | | | | |
| ND | 1.0 | | | | | | | | |
| ND | 1.0 | | | | | | | | |
| ND | 1.0 | | | | | | | | |
| ND | 1.0 | | | | | | | | |
| ND | 1.0 | | | | | | | | |
| ND | 1.0 | | | | | | | | |
| ND | 3.0 | | | | | | | | |
| ND | 2.0 | | | | | | | | |
| ND | 1.0 | | | | | | | | |
| | | | | | | | | | |
| ND | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| ND | 1.5 | | | | | | | | |
| | 1.0 | | | 22.2 | | 130 | | | |
| | | 10.00 | | 96.8 | 70 | | | | |
| 9.7 | | 10.00 | | 96.8 104 | 70 70 | | | | |
| | | 10.00 10.00 10.00 | | 96.8 104 101 | 70 70 70 | 130 130 130 | | | |
| | Batch Analysis D Result 19 20 22 20 9.9 10 10 10 10 10 32 20 9.9 10 10 10 10 10 10 10 10 10 10 10 10 10 | Batch ID: R2 Analysis Date: 4/ Result PQL 19 1.0 20 1.0 20 1.0 22 1.0 20 1.0 20 1.0 20 1.0 20 1.0 20 1.0 9.9 10 10 10 10 10 SampType: ME Batch ID: R2 Analysis Date: 4/ Result PQL ND 1.0 ND | 19 1.0 20.00 20 1.0 20.00 22 1.0 20.00 20 1.0 20.00 20 1.0 20.00 20 1.0 20.00 20 1.0 20.00 20 1.0 20.00 20 1.0 20.00 9.9 1.0.00 10.00 10 10.00 10.00 10 10.00 10.00 10 Result R25860 Analysis Date: A/29/2015 Analysis Result PQL SPK value ND 1.0 ND ND 1.0 Interval ND 1.0 <td>Batch ID: R25860 R Analysis Date: Y29/2015 S Result PQL SPK value SPK Ref Val 19 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 10 10.00 0 0 10 10.00 10.00 0 10 10.00 10.00 0 Result PQL SPK value SPK Ref Val ND 1.0 1.0 1.0 ND 1.0 1.0 1.0 ND 1.0 1.0 1.0 ND 1.0 1.0 1.0 ND</td> <td>Batch ID: R25860 RunNo: 2 Analysis Date: 4/29/2015 SeqNo: 7 Result PQL SPK value SPK Ref Val %REC 19 1.0 20.00 0 95.6 20 1.0 20.00 0 98.9 22 1.0 20.00 0 98.9 20 1.0 20.00 0 98.9 20 1.0 20.00 0 98.9 10 1.0 98.9 10.3 103 10 10.00 103 103 103 10 10.00 103 101 101 SampType: HELK TestCode: El Result PQL SPK value SPK Ref Val %REC ND 1.0 SPK SPK SPK SPK ND 1.0 SPK SPK SPK SPK Result PQL SPK value SPK Ref Val %REC ND 1.0 SPK SPK SPK SPK</td> <td>Runk: 25860 Analysis Dir: R23060 Runk: 25860 Analysis Dir: A/29/2015 SeqN: 766354 Result PQL SPK value SPK Ref Val %REC LowLimit 19 1.0 20.00 0 95.6 70 20 1.0 20.00 0 98.9 70 22 1.0 20.00 0 98.9 70 22 1.0 20.00 0 98.9 70 20 1.0 20.00 0 98.9 70 20 1.0 20.00 98.9 70 9.9 - 10.00 98.9 70 10 10.00 103 70 10 10.00 103 70 10 10.00 103 70 10 10.00 103 70 10 10.00 103 70 10 Result PQL SPK value SPK Ref Val %REC LowLimit ND 1.0 </td> <td>RunNo: 25860 Analysis Date: 4/29/2015 SeqNo: 766354 Units: µg/L Result PQL SPK value SPK Ref Val %REC LowLinit HighLinit 19 1.0 20.00 0 95.6 70 130 20 1.0 20.00 0 98.9 70 130 22 1.0 20.00 0 98.9 70 130 22 1.0 20.00 0 98.9 70 130 9.9 10.00 98.9 70 130 9.9 10.00 98.9 70 130 10 10.00 103 70 130 10 10.00 103 70 130 10 10.00 103 70 130 10 10.00 103 70 130 10 10.00 101 70 130 10 10.00 101 70 130 10 Result PQL SPK value SPK Ref Val %REC</td> <td>RunNo: 25860 Analysis Date: 4/29/2015 SeqNo: 766354 Units: µg/L Result PQL SPK value SPK Ref Val %REC LowLinit HighLinit %RPD 19 1.0 20.00 0 95.6 700 130 20 1.0 20.00 0 98.9 700 134 22 1.0 20.00 0 98.3 700 130 22 1.0 20.00 0 98.9 700 130 9.9 10.00 98.9 700 130 9.9 10.00 103 700 130 10 10.00 103 700 130 10 10.00 103 700 130 SampType: High 100.0 RunNo: 200.0 100</td> <td>Bate-Trip Runko: 2580/ Analysis Lie $4/29/2015$ SeqNo: 76334 Units: $µg/L$ Result PQL SPK value SPK Ref Val %REC LowLinit HighLinit %RPD RPDLinit Result PQL SPK value SPK Ref Val %REC LowLinit HighLinit %RPD RPDLinit Result PQL 200.00 0 98.9 700 1300 100 10000 1</td> | Batch ID: R25860 R Analysis Date: Y29/2015 S Result PQL SPK value SPK Ref Val 19 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 20 1.0 20.00 0 10 10.00 0 0 10 10.00 10.00 0 10 10.00 10.00 0 Result PQL SPK value SPK Ref Val ND 1.0 1.0 1.0 ND 1.0 1.0 1.0 ND 1.0 1.0 1.0 ND 1.0 1.0 1.0 ND | Batch ID: R25860 RunNo: 2 Analysis Date: 4/29/2015 SeqNo: 7 Result PQL SPK value SPK Ref Val %REC 19 1.0 20.00 0 95.6 20 1.0 20.00 0 98.9 22 1.0 20.00 0 98.9 20 1.0 20.00 0 98.9 20 1.0 20.00 0 98.9 10 1.0 98.9 10.3 103 10 10.00 103 103 103 10 10.00 103 101 101 SampType: HELK TestCode: El Result PQL SPK value SPK Ref Val %REC ND 1.0 SPK SPK SPK SPK ND 1.0 SPK SPK SPK SPK Result PQL SPK value SPK Ref Val %REC ND 1.0 SPK SPK SPK SPK | Runk: 25860 Analysis Dir: R23060 Runk: 25860 Analysis Dir: A/29/2015 SeqN: 766354 Result PQL SPK value SPK Ref Val %REC LowLimit 19 1.0 20.00 0 95.6 70 20 1.0 20.00 0 98.9 70 22 1.0 20.00 0 98.9 70 22 1.0 20.00 0 98.9 70 20 1.0 20.00 0 98.9 70 20 1.0 20.00 98.9 70 9.9 - 10.00 98.9 70 10 10.00 103 70 10 10.00 103 70 10 10.00 103 70 10 10.00 103 70 10 10.00 103 70 10 Result PQL SPK value SPK Ref Val %REC LowLimit ND 1.0 | RunNo: 25860 Analysis Date: 4/29/2015 SeqNo: 766354 Units: µg/L Result PQL SPK value SPK Ref Val %REC LowLinit HighLinit 19 1.0 20.00 0 95.6 70 130 20 1.0 20.00 0 98.9 70 130 22 1.0 20.00 0 98.9 70 130 22 1.0 20.00 0 98.9 70 130 9.9 10.00 98.9 70 130 9.9 10.00 98.9 70 130 10 10.00 103 70 130 10 10.00 103 70 130 10 10.00 103 70 130 10 10.00 103 70 130 10 10.00 101 70 130 10 10.00 101 70 130 10 Result PQL SPK value SPK Ref Val %REC | RunNo: 25860 Analysis Date: 4/29/2015 SeqNo: 766354 Units: µg/L Result PQL SPK value SPK Ref Val %REC LowLinit HighLinit %RPD 19 1.0 20.00 0 95.6 700 130 20 1.0 20.00 0 98.9 700 134 22 1.0 20.00 0 98.3 700 130 22 1.0 20.00 0 98.9 700 130 9.9 10.00 98.9 700 130 9.9 10.00 103 700 130 10 10.00 103 700 130 10 10.00 103 700 130 SampType: High 100.0 RunNo: 200.0 100 | Bate-Trip Runko: 2580/ Analysis Lie $4/29/2015$ SeqNo: 76334 Units: $µg/L$ Result PQL SPK value SPK Ref Val %REC LowLinit HighLinit %RPD RPDLinit Result PQL SPK value SPK Ref Val %REC LowLinit HighLinit %RPD RPDLinit Result PQL 200.00 0 98.9 700 1300 100 10000 1 |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

WO#: 1504C24 13-May-15

| Client: | Navajo Refining Company |
|----------|-------------------------|
| Project: | Monthly RO Reject |

| | <u> </u> | | | | | | 0040. 5411 | | | |
|------------------------|----------------|----------|-----------|-------------|-----------|--------------|-------------|------|----------|------|
| Sample ID MB-18998 | SampType: MBLK | | | | | PA Method | | | | |
| Client ID: PBW | Batc | h ID: 18 | 998 | R | RunNo: 2 | 5938 | | | | |
| Prep Date: 5/1/2015 | Analysis E | Date: 5/ | 5/2015 | S | eqNo: 7 | 69391 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Naphthalene | ND | 2.0 | | | | | | | | |
| 1-Methylnaphthalene | ND | 2.0 | | | | | | | | |
| 2-Methylnaphthalene | ND | 2.0 | | | | | | | | |
| Acenaphthylene | ND | 2.5 | | | | | | | | |
| Acenaphthene | ND | 2.0 | | | | | | | | |
| Fluorene | ND | 0.80 | | | | | | | | |
| Phenanthrene | ND | 0.60 | | | | | | | | |
| Anthracene | ND | 0.60 | | | | | | | | |
| Fluoranthene | ND | 0.30 | | | | | | | | |
| Pyrene | ND | 0.30 | | | | | | | | |
| Benz(a)anthracene | ND | 0.070 | | | | | | | | |
| Chrysene | ND | 0.20 | | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.10 | | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.070 | | | | | | | | |
| Benzo(a)pyrene | ND | 0.070 | | | | | | | | |
| Dibenz(a,h)anthracene | ND | 0.12 | | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.12 | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | ND | 0.25 | | | | | | | | |
| Surr Benzo(e)pyrene | 14 | | 20.00 | | 71.8 | 30.8 | 125 | | | |
| Sample ID LCS-18998 | Samp | Type: LC | S | Test | tCode: El | PA Method | 8310: PAHs | | | |
| Client ID: LCSW | | h ID: 18 | | R | RunNo: 2 | 5938 | | | | |
| Prep Date: 5/1/2015 | Analysis E | Date: 5/ | 5/2015 | s | SeqNo: 7 | 69392 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Naphthalene | 55 | 2.0 | 80.00 | 0 | 69.3 | 41 | 76.8 | | | |
| 1-Methylnaphthalene | 57 | 2.0 | 80.20 | 0 | 71.0 | 24.7 | 81 | | | |
| 2-Methylnaphthalene | 56 | 2.0 | 80.00 | 0 | 70.4 | 17.4 | 81.9 | | | |
| Acenaphthylene | 60 | 2.5 | 80.20 | 0 | 75.4 | 50.3 | 77.5 | | | |
| Acenaphthene | 57 | 2.0 | 80.00 | 0 | 71.8 | 27.7 | 81.1 | | | |
| Fluorene | 5.8 | 0.80 | 8.020 | 0 | 72.8 | 34.2 | 75.1 | | | |
| Phenanthrene | 2.9 | 0.60 | 4.020 | 0 | 72.4 | 44.6 | 88.3 | | | |
| Anthracene | 2.9 | 0.60 | 4.020 | 0 | 72.1 | 41.9 | 85.3 | | | |
| Fluoranthene | 6.1 | 0.30 | 8.020 | 0 | 76.2 | 40.6 | 88 | | | |
| Pyrene | 6.6 | 0.30 | 8.020 | 0 | 82.8 | 41 | 86.6 | | | |
| Benz(a)anthracene | 0.62 | 0.070 | 0.8020 | 0 | 77.3 | 43.8 | 86.7 | | | |
| Chrysene | 3.1 | 0.070 | 4.020 | 0 | 76.9 | 44.5 | 80.7 | | | |
| Benzo(b)fluoranthene | 0.81 | 0.20 | 1.002 | 0 | 80.8 | 44.3 | 87.1 | | | |
| Benzo(k)fluoranthene | 0.39 | 0.070 | 0.5000 | 0 | 78.0 | 44.3 39.9 | 94.3 | | | |
| | | | | | | .74 4 | 94.5 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

Page 16 of 20

| QC SUMMARY REPORT |
|--|
| Hall Environmental Analysis Laboratory, Inc. |

| WO#: | 1504C24 |
|------|-----------|
| | 13-May-15 |

| Client: Navajo F | Refining Co | ompany | | | | | | | | |
|--|-------------|--------------|----------------|-------------|-----------|--------------|-------------|------|----------|------|
| Project: Monthly | RO Reject | t | | | | | | | | |
| Sample ID LCS-18998 | Samp | Type: LC | s | Tes | tCode: El | PA Method | 8310: PAHs | | | |
| Client ID: LCSW | Batc | h ID: 18 | 998 | F | RunNo: 2 | 5938 | | | | |
| Prep Date: 5/1/2015 | Analysis [| Date: 5/ | 5/2015 | s | SeqNo: 7 | 69392 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzo(a)pyrene | 0.39 | 0.070 | 0.5020 | 0 | 77.7 | 44 | 86.5 | | | |
| Dibenz(a,h)anthracene | 0.78 | 0.12 | 1.002 | 0 | 77.8 | 48.8 | 83.6 | | | |
| Benzo(g,h,i)perylene | 0.83 | 0.12 | 1.000 | 0 | 83.0 | 43.6 | 84.5 | | | |
| Indeno(1,2,3-cd)pyrene | 1.6 | 0.25 | 2.004 | 0 | 77.3 | 49.2 | 91.1 | | | |
| Surr: Benzo(e)pyrene | 21 | 8380286-4640 | 20.00 | 5-30 | 106 | 30.8 | 125 | | | |
| Sample ID LCSD-18998 | Samp | Type: LC | SD | Tes | tCode: El | PA Method | 8310: PAHs | | | |
| Client ID: LCSS02 | Batc | h ID: 18 | 998 | F | RunNo: 2 | 5938 | | | | |
| Prep Date: 5/1/2015 | Analysis [| Date: 5/ | 5/2015 | 5 | SeqNo: 7 | 69393 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Naphthalene | 58 | 2.0 | 80.00 | 0 | 72.7 | 41 | 76.8 | 4.75 | 20 | |
| 1-Methylnaphthalene | 60 | 2.0 | 80.20 | 0 | 74.4 | 24.7 | 81 | 4.68 | 20 | |
| 2-Methylnaphthalene | 59 | 2.0 | 80.00 | 0 | 73.8 | 17.4 | 81.9 | 4.70 | 20 | |
| Acenaphthylene | 63 | 2.5 | 80.20 | 0 | 78.7 | 50.3 | 77.5 | 4.29 | 20 | S |
| Acenaphthene | 60 | 2.0 | 80.00 | 0 | 74.9 | 27.7 | 81.1 | 4.26 | 20 | |
| Fluorene | 6.1 | 0.80 | 8.020 | 0 | 75.7 | 34.2 | 75.1 | 3.86 | 20 | S |
| Phenanthrene | 3.1 | 0.60 | 4.020 | 0 | 76.1 | 44.6 | 88.3 | 5.03 | 24 | |
| Anthracene | 3.0 | 0.60 | 4.020 | 0 | 75.9 | 41.9 | 85.3 | 5.04 | 20 | |
| Fluoranthene | 6.4 | 0.30 | 8.020 | 0 | 79.9 | 40.6 | 88 | 4.79 | 20.9 | |
| Pyrene | 7.0 | 0.30 | 8.020 | 0 | 86.8 | 41 | 86.6 | 4.71 | 20.8 | S |
| Benz(a)anthracene | 0.65 | 0.070 | 0.8020 | 0 | 81.0 | 43.8 | 86.7 | 4.72 | 20 | |
| Chrysene | 3.3 | 0.20 | 4.020 | 0 | 80.8 | 44.5 | 80.7 | 5.05 | 20 | S |
| Benzo(b)fluoranthene | 0.84 | 0.10 | 1.002 | 0 | 83.8 | 44.3 | 87.1 | 3.64 | 20.6 | |
| Benzo(k)fluoranthene | 0.41 | 0.070 | 0.5000 | 0 | 82.0 | 39.9 | 94.3 | 5.00 | 20.8 | |
| Benzo(a)pyrene | 0.41 | 0.070 | 0.5020 | 0 | 81.7 | 44 | 86.5 | 5.00 | 20 | |
| Dibenz(a,h)anthracene | 0.83 | 0.12 | 1.002 | 0 | 82.8 | 48.8 | 83.6 | 6.21 | 20 | |
| www.coline.coline.com | | | | 0 | 07.0 | 10.0 | 04 5 | 4 74 | 00 | 0 |
| Benzo(g,h,i)perylene | 0.87 | 0.12 | 1.000 | 0 | 87.0 | 43.6 | 84.5 | 4.71 | 20 | S |
| Benzo(g,h,i)perylene Indeno(1,2,3-cd)pyrene | 0.87 1.6 | 0.12 0.25 | 1.000 2.004 | 0 | 87.0 | 43.6 49.2 | 91.1 | 5.03 | 20 | 5 |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Value above quantitation range E
- Analyte detected below quantitation limits J
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

Page 17 of 20

| | | | | , | | | | | | 10 1110/ 10 |
|-----------|-------------------------------|----------|-----------|-------------|-----------|-------------|--------------|--------|-----------------|-------------|
| | o Refining Co ly RO Reject | · · | | | | | | | | |
| MB-18972 | SampT | ype: M | BLK | Tes | tCode: To | otal Phenol | ics by SW-84 | 6 9067 | | |
| PBW | Batc | h ID: 18 | 972 | F | RunNo: 2 | 5901 | | | | |
| 4/30/2015 | Analysis D | Date: 4/ | 30/2015 | S | eqNo: 7 | 67792 | Units: µg/L | | | |
| | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

| Phenolics, Total Recoverable | ND | 2.5 | | | | | | | | |
|------------------------------|------------|---------|-----------|-------------|-----------|-------------|--------------|--------|----------|------|
| Sample ID LCS-18972 | SampT | ype: LC | S | Tes | tCode: To | otal Phenol | ics by SW-84 | 6 9067 | | |
| Client ID: LCSW | Batch | ID: 18 | 972 | F | RunNo: 2 | 5901 | | | | |
| Prep Date: 4/30/2015 | Analysis D | ate: 4/ | 30/2015 | S | SeqNo: 7 | 67793 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Phenolics, Total Recoverable | 22 | 2.5 | 20.00 | 0 | 109 | 75.7 | 126 | | | |

Qualifiers:

Client:

Project:

Client ID:

Prep Date:

Analyte

Sample ID MB-18972

- Value exceeds Maximum Contaminant Level. *
- E Value above quantitation range
- Analyte detected below quantitation limits J
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - **Reporting Detection Limit** RL

Page 18 of 20

WO#:

| Client: Project: | | o Refining C ly RO Rejec | | | | | | | | | |
|---------------------|-----------|-----------------------------|-----------|-----------|-------------|-----------|-------------|--------------|--------|----------|------|
| Sample ID | MB-R26153 | Samp | Type: MI | BLK | Tes | tCode: El | PA 335.4: T | otal Cyanide | Subbed | | |
| Client ID: | PBW | Bate | ch ID: R2 | 26153 | F | RunNo: 2 | 6153 | | | | |
| Prep Date: | | Analysis | Date: 5 | /5/2015 | S | SeqNo: 7 | 75896 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Cyanide | | ND | 0.0100 | | | | | | | | |

| Sample ID LCS-R26153 | SampT | pe: LC | s | Test | tCode: E | PA 335.4: T | otal Cyanide | Subbed | | |
|----------------------|-------------|---------|-----------|-------------|----------|-------------|--------------|--------|----------|------|
| Client ID: LCSW | Batch | ID: R2 | 6153 | R | unNo: 2 | 6153 | | | | |
| Prep Date: | Analysis Da | ate: 5/ | 5/2015 | S | eqNo: 7 | 75897 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Cyanide | 0.500 | | 0.5000 | 0 | 100 | 90 | 110 | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - Reporting Detection Limit RL

Page 19 of 20

WO#: 1504C24 13-May-15

| WO#: | 1504C24 |
|------|-----------|
| | 13-Mav-15 |

| | avajo Refining Company onthly RO Reject | | |
|------------------------|--|---------------------------|-----------------------------|
| Sample ID MB-18979 | SampType: MBLK | TestCode: SM2540C MC | D: Total Dissolved Solids |
| Client ID: PBW | Batch ID: 18979 | RunNo: 25912 | |
| Prep Date: 4/30/201 | Analysis Date: 5/1/2015 | SeqNo: 768004 | Units: mg/L |
| Analyte | Result PQL SPK value | SPK Ref Val %REC LowLimit | HighLimit %RPD RPDLimit Qua |
| Total Dissolved Solids | ND 20.0 | | |
| Sample ID LCS-1897 | SampType: LCS | TestCode: SM2540C MC | D: Total Dissolved Solids |
| Client ID: LCSW | Batch ID: 18979 | RunNo: 25912 | |
| Prep Date: 4/30/2019 | Analysis Date: 5/1/2015 | SeqNo: 768005 | Units: mg/L |
| Analyte | Result PQL SPK value | SPK Ref Val %REC LowLimit | HighLimit %RPD RPDLimit Qua |
| Total Dissolved Solids | 999 20.0 1000 | 0 99.9 80 | 120 |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits J
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

Page 20 of 20

| LABORATORY | ALCHER NO STREET, MO | allenvironmental | | | |
|---|----------------------|------------------|-------------|------------------------------------|-------------------------|
| Client Name: NAVAJO REFINING CO | Work Order Numbe | r: 1504C24 | | RoptNo: 1 | |
| Received by/date: | 64/29/15 | | | | |
| Logged By: Lindsay Mangin | 4/29/2015 9:15:00 AM | 4 | July Hugo | | |
| Completed By: Lindsay Mangin | 4/29/2015 10:14:50 A | м | Alto | | |
| Reviewed By: | 04/29/15 | | | | |
| Chain of Custody | 0//~/// | | | | |
| 1. Custody seals intact on sample bottles? | * | Yes | No 🗌 | Not Present | |
| 2. Is Chain of Custody complete? | | Yes 🗹 | No 🗌 | Not Present | |
| 3. How was the sample delivered? | | Courier | | | |
| Log In | | | | | |
| 4. Was an attempt made to cool the sample | s? | Yes 🗸 | No 🗌 | | |
| 5. Were all samples received at a temperatu | re of >0° C to 6.0°C | Yes 🔽 | No 🗌 | | |
| 6. Sample(s) in proper container(s)? | | Yes 🔽 | No 🗌 | | |
| 7. Sufficient sample volume for indicated tes | t(s)? | Yes 🗸 | No 🗌 | | |
| 8. Are samples (except VOA and ONG) prop | erly preserved? | Yes 🗹 | No 🗌 | | |
| 9. Was preservative added to bottles? | | Yes 🗌 | No 🗹 | NA 🗌 | |
| 10.VOA vials have zero headspace? | | Yes | No U | CS 04/29/15 Sami | ple -002, has a bub. |
| 11. Were any sample containers received bro | ken? | Yes 🗆 | No 🗸 | (2 of a) | nas a eaco |
| | | | | # of preserved bottles checked | |
| 12. Does paperwork match bottle labels? | | Yes 🖌 | No 🗌 | for pH: _ DA | |
| (Note discrepancies on chain of custody) 13. Are matrices correctly identified on Chain | of Crustody 2 | Yes 🔽 | No 🗆 | (<2 g/ 12 upless n Adjusted? NO | iatea) |
| 13. Are matrices correctly identified on Chain 14. Is it clear what analyses were requested? | of Custody? | Yes 🗹 | No 🗌 | | |
| 15. Were all holding times able to be met? | | Yes 🔽 | No 🗌 | Checked by: CS | |
| (If no, notify customer for authorization.) | | | | | |
| special Handling (if applicable) | | | | | |
| 6. Was client notified of all discrepancies wit | h this order? | Yes 🗌 | No 🗌 | NA 🗹 | |
| Person Notified: | Date | | | | |
| By Whom: | Via: | 🗌 eMail 🔲 I | Phone 🗌 Fax | In Person | |
| Regarding: | | | | | |
| Client Instructions: | | | | | |

1.0 Good

Yes

Page 1 of 1

1

| Cha | ain-oi | F-Cus | Chain-of-Custody Record | Turn-Around Time: | 11116 | | | MALL ENVIDONMENTAL |
|---------------------------------------|-------------------|------------------|---|-----------------------------|----------------------|------------------|--------|---|
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| | | | | Project Name: | | | | www.hallenvironmental.com |
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| NM 88211-0159 | 0159 | | | Project #: P.O. # 167796 |). # 167796 | | | Tel. 505-345-3975 Fax 505-345-4107 |
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July 15, 2015

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

Oil Conservation Division New Mexico Energy, Minerals & Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505

RE: WQA-OCD-CO-2015-002 Monthly Report – June 2015 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the Navajo Refining Company, L.L.C. (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's July 2015 monthly report, for the period of June 1-30, under the Order.

Specifically, this report covers the June 2015 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a - c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Navajo Refining Company, L.L.C. 501 East Main • Artesia, NM 88210 (575) 748-3311 • <u>http://www.hollyfrontier.com</u> OCD July 15, 2015 Page 2 of 3

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire June reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from June 1 through June 30.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from June 1 through June 30.

Navajo has calculated a penalty of \$2,600 for June 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 26 days in June. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on June 5, 2015. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Options under consideration include the installation of a third permanent RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid produced. Navajo is also evaluating options for the underground injection of RO reject fluid. In addition, Navajo is conducting a study of background groundwater concentrations of key chemical constituents of the RO reject fluid discharged under its groundwater discharge permit to determine whether concentrations of these constituents exceed background levels.

> Navajo Refining Company, L.L.C. 501 East Main • Artesia, NM 88210 (575) 748-3311 • <u>http://www.hollyfrontier.com</u>

OCD July 15, 2015 Page 3 of 3

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted a GW-028 discharge permit modification request on May 22, 2015. The requested modifications include operating a temporary RO unit at the Navajo Refinery and increasing the total maximum volume of RO reject fluids that can be applied to the surface of Navajo's discharge fields from approximately 10,000 bbl/day to approximately 20,000 bbl/day calculated on a rolling 12-month average. OCD notified Navajo that the application for the requested permit modification is administratively complete by letter dated July 1, 2015.

Navajo is currently evaluating alternative locations for the permitting and construction of a new nonhazardous waste injection well for use in disposal of Refinery fluids, including RO reject water. Navajo previously submitted an application for a Discharge Permit for the new injection well (WDW-4) on November 7, 2014. OCD notified Navajo that the application was administratively complete by letter dated April 23, 2015. On June 25, 2015, Navajo withdrew the OCD permit application to allow for further technical review regarding well locations and injection zones to confirm sufficient injection capacity to meet the refinery's needs. Navajo will provide a new application to OCD when the review is complete, and well location(s) are selected.

Navajo is committed to proactively meeting the requirements of the Order and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,

Scott M. Denton Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates Attachment 2: Stipulated Penalty Calculation Attachment 3: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder OCD: A. Marks, B. Brancard Attachment 1 Daily Discharge Flow Rates

| | | Permanen | t RO Units | Temporary Unit | | Daily Discharge Volume | |
|-----------|--------------|----------|--|----------------|---|------------------------------|-------|
| | Metered Data | | Combined RO Reject Discharge (Calculated) | | Total RO Reject Discharge (Calculated from Log Data) | | |
| | GPM | GPM | GPM | BBL/DAY | GPM | BBL/DAY | BBL |
| | SOUTH | NORTH | | | | | |
| 6/1/2015 | 142 | 107 | 249 | 8537 | 61 | 2096 | 10633 |
| 6/2/2015 | 139 | 106 | 245 | 8400 | 60 | 2069 | 10469 |
| 6/3/2015 | 139 | 114 | 253 | 8674 | 60 | 2065 | 10739 |
| 6/4/2015 | 137 | 104 | 241 | 8263 | 79 | 2709 | 10972 |
| 6/5/2015 | 101 | 83 | 184 | 6309 | 116 | 3962 | 10271 |
| 6/6/2015 | 0 | 124 | 124 | 4251 | 70 | 2387 | 6638 |
| 6/7/2015 | 130 | 108 | 238 | 8160 | 62 | 2137 | 10297 |
| 6/8/2015 | 132 | 95 | 227 | 7783 | 63 | 2147 | 9930 |
| 6/9/2015 | 135 | 113 | 248 | 8503 | 59 | 2022 | 10525 |
| 6/10/2015 | 129 | 109 | 238 | 8160 | 51 | 1735 | 9895 |
| 6/11/2015 | 133 | 117 | 250 | 8571 | 52 | 1783 | 10354 |
| 6/12/2015 | 139 | 108 | 247 | 8469 | 52 | 1799 | 10268 |
| 6/13/2015 | 133 | 107 | 240 | 8229 | 56 | 1911 | 10140 |
| 6/14/2015 | 130 | 109 | 239 | 8194 | 57 | 1961 | 10155 |
| 6/15/2015 | 132 | 111 | 243 | 8331 | 59 | 2027 | 10358 |
| 6/16/2015 | 140 | 112 | 252 | 8640 | 60 | 2057 | 10697 |
| 6/17/2015 | 135 | 114 | 249 | 8537 | 60 | 2057 | 10594 |
| 6/18/2015 | 141 | 112 | 253 | 8674 | 61 | 2081 | 10755 |
| 6/19/2015 | 135 | 104 | 239 | 8194 | 61 | 2091 | 10285 |
| 6/20/2015 | 131 | 117 | 248 | 8503 | 64 | 2200 | 10703 |
| 6/21/2015 | 137 | 115 | 252 | 8640 | 64 | 2196 | 10836 |
| 6/22/2015 | 133 | 103 | 236 | 8091 | 65 | 2241 | 10332 |
| 6/23/2015 | 137 | 107 | 244 | 8366 | 60 | 2049 | 10415 |
| 6/24/2015 | 125 | 107 | 232 | 7954 | 55 | 1902 | 9856 |
| 6/25/2015 | 131 | 106 | 237 | 8126 | 59 | 2031 | 10157 |
| 6/26/2015 | 123 | 111 | 234 | 8023 | 63 | 2156 | 10179 |
| 6/27/2015 | 131 | 114 | 245 | 8400 | 63 | 2160 | 10560 |
| 6/28/2015 | 123 | 110 | 233 | 7989 | 63 | 2160 | 10149 |
| 6/29/2015 | 122 | 109 | 231 | 7920 | 64 | 2179 | 10099 |
| 6/30/2015 | 129 | 105 | 234 | 8023 | 64 | 2194 | 10217 |

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

Attachment 2 Stipulated Penalty Calculation

Calculation of Stipulated Penalties - June 2015

| Order Section III., Paragraph Number | Penalty | Payment per day | No. of Days (per violation) | Amount |
|---|--|--------------------|-----------------------------------|---------|
| 2.b.i | Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028: | | | |
| 2.b.i.1 | - Prior to Navajo submitting a discharge permit modification application | \$1,000 | | \$0 |
| 2.b.i.2 | If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application | \$100 | 26 | \$2,600 |
| 2.b.i.2 | - If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application | \$500 | | \$0 |
| 2.b.ii | Failure to conduct sampling as required in Exhibit A of Order | \$2,000 | | \$0 |
| 2.b.iii | Failure to timely submit any report or notifications as required in Exhibit A of Order | \$1,000 | | \$0 |
| 2.b.iv | Failure to record the daily discharge flow from the permanent and the temporary RO units | \$1,000 | | \$0 |
| | | Total | Amount: | \$2,600 |

Attachment 3 Analytical Lab Report



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

June 22, 2015

Robert Combs Navajo Refining Company P.O. Box 159 Artesia, NM 88211-0159 TEL: (575) 748-3311 FAX

RE: Monthly Temporary RO Reject

OrderNo.: 1506316

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/6/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1506316 Date Reported: 6/22/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company Monthly Temporary RO Reject **Project:**

1506316-001

Lab ID:

Client Sample ID: South Field RO Reject Discharge Collection Date: 6/5/2015 1:54:00 PM

Received Date: 6/6/2015 12:15:00 PM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|-------------------------------------|--------------|-------------|----------|-------------|----------|------------------------|--------|
| EPA 200.8: DISSOLVED METALS | | | | | | Analyst | DBD |
| Arsenic | ND | 0.0050 | | mg/L | 5 | 6/17/2015 7:44:15 PM | R26904 |
| Lead | ND | 0.0010 | | mg/L | 1 | 6/16/2015 7:43:36 PM | R26876 |
| Selenium | 0.0099 | 0.0010 | | mg/L | 1 | 6/16/2015 7:43:36 PM | R26876 |
| Uranium | 0.0082 | 0.0010 | | mg/L | 1 | 6/16/2015 7:43:36 PM | R26876 |
| EPA 903.1: RA 226 AND EPA 904.0: RA | 228-SUBBE | D | | | | Analyst | SUB |
| Radium-226 | 2.04 | 0.578 | | pCi/L | 1 | 6/16/2015 | R26972 |
| Radium-226 ± | 0.849 | 0.578 | | pCi/L | 1 | 6/16/2015 | R26972 |
| Radium-228 | 0.384 | 0.696 | | pCi/L | 1 | 6/16/2015 | R26972 |
| Radium-228 ± | 0.345 | 0.696 | | pCi/L | 1 | 6/16/2015 | R26972 |
| EPA METHOD 300.0: ANIONS | | | | | | Analyst | LGT |
| Fluoride | 4.6 | 2.0 | * | mg/L | 20 | 6/8/2015 1:22:42 PM | R26695 |
| Chloride | 460 | 50 | | mg/L | 100 | 6/10/2015 1:28:53 AM | R26721 |
| Sulfate | 2300 | 50 | | mg/L | 100 | 6/10/2015 1:28:53 AM | R26721 |
| Nitrate+Nitrite as N | 1.8 | 1.0 | | mg/L | 5 | 6/9/2015 4:16:18 AM | R26695 |
| SM2540C MOD: TOTAL DISSOLVED SO | LIDS | | | | | Analyst | KS |
| Total Dissolved Solids | 4710 | 20.0 | * | mg/L | 1 | 6/10/2015 12:32:00 PM | 19636 |
| EPA 335.4: TOTAL CYANIDE SUBBED | | | | | | Analyst | SUB |
| Cyanide | ND | 0.0100 | | mg/L | 1 | 6/18/2015 | R26972 |
| SM4500-H+B: PH | | | | | | Analyst | JRR |
| рH | 8.03 | 1.68 | н | pH units | 1 | 6/9/2015 9:57:39 PM | R26740 |
| EPA METHOD 200.7: DISSOLVED META | LS | | | | | Analyst | JLF |
| Aluminum | ND | 0.020 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Barium | 0.080 | 0.0020 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Boron | 0.098 | 0.040 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Cadmium | ND | 0.0020 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Chromium | 0.0067 | 0.0060 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Cobalt | ND | 0.0060 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Copper | ND | 0.0060 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Iron | 0.040 | 0.020 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Manganese | 0.012 | 0.0020 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Molybdenum | ND | 0.0080 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Nickel | ND | 0.010 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Silver | ND | 0.0050 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| Zinc | 0.030 | 0.010 | | mg/L | 1 | 6/16/2015 5:05:13 PM | R26882 |
| EPA METHOD 245.1: MERCURY | | | | | | Analyst | MED |
| Mercury | ND | 0.00020 | | mg/L | 1 | 6/9/2015 3:13:06 PM | 19630 |
| Refer to the QC Summary report an | d sample log | in checklis | t for fl | agged QC da | ta and p | reservation informatio | n. |

Matrix: AQUEOUS

* Value exceeds Maximum Contaminant Level. Value above quantitation range

Holding times for preparation or analysis exceeded H

Page 1 of 21

Not Detected at the Reporting Limit

J Analyte detected below quantitation limits

RSD is greater than RSDlimit 0

E

R RPD outside accepted recovery limits

Spike Recovery outside accepted recovery limits S

Р Sample pH Not In Range Reporting Detection Limit RL

ND

Analytical Report Lab Order 1506316 Date Reported: 6/22/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company **Project:** Monthly Temporary RO Reject 1506316-001

Lab ID:

Client Sample ID: South Field RO Reject Discharge Collection Date: 6/5/2015 1:54:00 PM Received Date: 6/6/2015 12:15:00 PM

Analyses Result **RL** Oual Units **DF** Date Analyzed Batch EPA METHOD 8011/504.1: EDB Analyst: JME 1,2-Dibromoethane ND 0.010 µg/L 6/11/2015 5:16:00 PM 19674 1 Analyst: SCC EPA METHOD 8082: PCB'S ND Aroclor 1016 1.0 µg/L 1 6/12/2015 2:49:54 PM 19626 Aroclor 1221 ND 1.0 µg/L 1 6/12/2015 2:49:54 PM 19626 Aroclor 1232 ND 1.0 µg/L 1 6/12/2015 2:49:54 PM 19626 Aroclor 1242 ND 1.0 µg/L 1 6/12/2015 2:49:54 PM 19626 Aroclor 1248 ND 1.0 µg/L 6/12/2015 2:49:54 PM 19626 1 ND Aroclor 1254 1.0 µg/L 6/12/2015 2:49:54 PM 19626 1 Aroclor 1260 ND 1.0 µg/L 1 6/12/2015 2:49:54 PM 19626 6/12/2015 2:49:54 PM 93.6 %REC Surr: Decachlorobiphenyl 44.5-110 1 19626 Surr: Tetrachloro-m-xylene 82.8 31.8-95.7 %REC 1 6/12/2015 2:49:54 PM 19626 EPA METHOD 8015D: DIESEL RANGE Analyst: KJH **Diesel Range Organics (DRO)** ND 1.0 1 6/9/2015 10:08:27 PM 19616 mg/L Motor Oil Range Organics (MRO) ND 5.0 mg/L 1 6/9/2015 10:08:27 PM 19616 Surr: DNOP 105 76.5-150 %REC 1 6/9/2015 10:08:27 PM 19616 EPA METHOD 8015D: GASOLINE RANGE Analyst: NSB 6/10/2015 6:06:50 PM R26753 Gasoline Range Organics (GRO) ND 0.050 mg/L 1 Surr: BFB 90.7 57.8-137 %REC 6/10/2015 6:06:50 PM R26753 1 EPA METHOD 8310: PAHS Analyst: SCC Naphthalene ND 2.0 µg/L 1 6/16/2015 12:08:51 PM 19627 ND 2.0 6/16/2015 12:08:51 PM 19627 1-Methylnaphthalene µg/L 1 2-Methylnaphthalene 6/16/2015 12:08:51 PM ND 2.0 µg/L 1 19627 ND Benzo(a)pyrene 0.070 µg/L 6/16/2015 12:08:51 PM 19627 1 Surr: Benzo(e)pyrene 66.6 37.2-136 %REC 1 6/16/2015 12:08:51 PM 19627 EPA METHOD 8260B: VOLATILES Analyst: DJF Benzene ND 1.0 1 6/13/2015 8:29:41 AM R26817 µg/L Toluene ND 1.0 µg/L 1 6/13/2015 8:29:41 AM R26817 Ethylbenzene ND 6/13/2015 8:29:41 AM R26817 1.0 µg/L 1 1,2-Dichloroethane (EDC) ND 1.0 µg/L 1 6/13/2015 8:29:41 AM R26817 1,2-Dibromoethane (EDB) ND 1.0 µg/L 1 6/13/2015 8:29:41 AM R26817 Carbon Tetrachloride ND 1.0 6/13/2015 8:29:41 AM R26817 µg/L 1 Chloroform ND 1.0 µg/L 1 6/13/2015 8:29:41 AM R26817 1,1-Dichloroethane ND 1.0 µg/L 1 6/13/2015 8:29:41 AM R26817 6/13/2015 8:29:41 AM 1,1-Dichloroethene ND R26817 1.0 µg/L 1 ND Methylene Chloride 3.0 µg/L 1 6/13/2015 8:29:41 AM R26817 1,1,2,2-Tetrachloroethane ND 2.0 µg/L 1 6/13/2015 8:29:41 AM R26817 Tetrachloroethene (PCE) ND 1.0 6/13/2015 8:29:41 AM R26817 µg/L 1

Matrix: AQUEOUS

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers: * Value exceeds Maximum Contaminant Level.

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank B
- H Holding times for preparation or analysis exceeded
 - Not Detected at the Reporting Limit Page 2 of 21
- Р Sample pH Not In Range

ND

RL **Reporting Detection Limit**

Analytical Report Lab Order 1506316 Date Reported: 6/22/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company **Project:** Monthly Temporary RO Reject Client Sample ID: South Field RO Reject Discharge Collection Date: 6/5/2015 1:54:00 PM Received Date: 6/6/2015 12:15:00 PM

| Lab ID: 1506316-001 | Matrix: | AQUEOUS | 5/2015 12:15:00 PM | | | |
|--------------------------------|---------|---------|--------------------|----|----------------------|--------|
| Analyses | Result | RL Q | Qual Units | DF | Date Analyzed | Batch |
| EPA METHOD 8260B: VOLATILES | | | | | Analyst | DJF |
| 1,1,1-Trichloroethane | ND | 1.0 | µg/L | 1 | 6/13/2015 8:29:41 AM | R26817 |
| 1,1,2-Trichloroethane | ND | 1.0 | µg/L | 1 | 6/13/2015 8:29:41 AM | R26817 |
| Trichloroethene (TCE) | ND | 1.0 | µg/L | 1 | 6/13/2015 8:29:41 AM | R26817 |
| Vinyl chloride | ND | 1.0 | µg/L | 1 | 6/13/2015 8:29:41 AM | R26817 |
| Xylenes, Total | ND | 1.5 | µg/L | 1 | 6/13/2015 8:29:41 AM | R26817 |
| Surr: 1,2-Dichloroethane-d4 | 90.0 | 70-130 | %REC | 1 | 6/13/2015 8:29:41 AM | R26817 |
| Surr: 4-Bromofluorobenzene | 101 | 70-130 | %REC | 1 | 6/13/2015 8:29:41 AM | R26817 |
| Surr: Dibromofluoromethane | 96.9 | 70-130 | %REC | 1 | 6/13/2015 8:29:41 AM | R26817 |
| Surr: Toluene-d8 | 100 | 70-130 | %REC | 1 | 6/13/2015 8:29:41 AM | R26817 |
| TOTAL PHENOLICS BY SW-846 9067 | | | | | Analyst | SCC |
| Phenolics, Total Recoverable | ND | 2.5 | µg/L | 1 | 6/18/2015 | 19794 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | В | Analyte detected in the associated Meth | od Blank |
|-------------|---|---|----|---|--------------|
| | Е | Value above quantitation range | н | Holding times for preparation or analys | is exceeded |
| | J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit | Page 3 of 21 |
| | 0 | RSD is greater than RSDlimit | Р | Sample pH Not In Range | 1 age 5 61 2 |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit | |
| | S | Spike Recovery outside accepted recovery limits | | | |

Analytical Report Lab Order 1506316

Hall Environmental Analysis Laboratory, Inc.

Lab Order 1506316 Date Reported: 6/22/2015

CLIENT: Navajo Refining CompanyProject: Monthly Temporary RO RejectLab ID: 1506316-002

Collection Date:

Client Sample ID: Trip Blank

Matrix: TRIP BLANK Received Date: 6/6/2015 12:15:00 PM

| Analyses | Result | RL Qu | al Units | DF | Date Analyzed | Batch |
|-----------------------------|--------|--------|----------|----|----------------------|--------|
| EPA METHOD 8260B: VOLATILES | | | | | Analyst | DJF |
| Benzene | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Toluene | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Ethylbenzene | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| 1,2-Dichloroethane (EDC) | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| 1,2-Dibromoethane (EDB) | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Carbon Tetrachloride | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Chloroform | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| 1,1-Dichloroethane | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| 1,1-Dichloroethene | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Methylene Chloride | ND | 3.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| 1,1,2,2-Tetrachloroethane | ND | 2.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Tetrachloroethene (PCE) | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| 1,1,1-Trichloroethane | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| 1,1,2-Trichloroethane | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Trichloroethene (TCE) | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Vinyl chloride | ND | 1.0 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Xylenes, Total | ND | 1.5 | µg/L | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Surr: 1,2-Dichloroethane-d4 | 95.4 | 70-130 | %REC | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Surr: 4-Bromofluorobenzene | 98.6 | 70-130 | %REC | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Surr: Dibromofluoromethane | 95.4 | 70-130 | %REC | 1 | 6/13/2015 9:25:05 AM | R26817 |
| Surr: Toluene-d8 | 98.5 | 70-130 | %REC | 1 | 6/13/2015 9:25:05 AM | R26817 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | В | Analyte detected in the associated Meth | od Blank |
|-------------|---|---|----|--|---------------|
| | E | Value above quantitation range | н | Holding times for preparation or analyst | is exceeded |
| | J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit | Page 4 of 21 |
| | 0 | RSD is greater than RSDlimit | Р | Sample pH Not In Range | 1 uge + 01 21 |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit | |
| | S | Spike Recovery outside accepted recovery limits | | | |

WO#: 1506316 22-Jun-15

| Client: Project: | | Navajo Refining C Monthly Tempora | | | | | | | | | |
|---|-------------|--|--|--|---|---|---|---|-------------------|------------------------|------|
| Sample ID | MB | Samp | Type: MI | BLK | Tes | tCode: El | PA Method | 200.7: Dissol | ved Metal | s | |
| Client ID: | PBW | Bat | ch ID: R2 | 6882 | F | RunNo: 2 | 6882 | | | | |
| Prep Date: | | Analysis | Date: 6 | 16/2015 | S | SeqNo: 8 | 02272 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aluminum | | ND | 0.020 | | | | | | | | |
| Barium | | ND | 0.0020 | | | | | | | | |
| Boron | | ND | 0.040 | | | | | | | | |
| Cadmium | | ND | 0.0020 | | | | | | | | |
| Chromium | | ND | 0.0060 | | | | | | | | |
| Cobalt | | ND | 0.0060 | | | | | | | | |
| Copper | | ND | 0.0060 | | | | | | | | |
| ron | | ND | 0.020 | | | | | | | | |
| Manganese | | ND | 0.0020 | | | | | | | | |
| | | ND | 0.0080 | | | | | | | | |
| Molybdenum | | | | | | | | | | | |
| Vlolybdenum Nickel | | ND | 0.010 | | | | | | | | |
| • | | ND ND | 0.010 | | | | | | | | |
| Nickel | | | | | | | | | | | |
| Nickel Silver Zinc | LCS | ND ND | 0.0050 0.010 | s | Tes | tCode: El | PA Method | 200.7: Dissol | ved Metal | s | |
| Nickel Silver Zinc Sample ID | | ND ND Samp | 0.0050 0.010 Type: LC | | | | | 200.7: Dissol | ved Meta | s | |
| Nickel Silver Zinc Sample ID Client ID: | LCS LCSW | ND ND Samp Bat | 0.0050 0.010 Type: LC ch ID: R2 | 6882 | F | RunNo: 2 | 6882 | | ved Metal | ls | |
| Nickel Silver Zinc Sample ID Client ID: Prep Date: | | ND ND Samp Bate Analysis | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ | 26882 (16/2015 | F | RunNo: 20 SeqNo: 80 | 6882 02273 | Units: mg/L | | | |
| Nickel Silver Zinc Sample ID Client ID: Prep Date: Analyte | | ND ND Samp Bate Analysis Result | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL | 26882 (16/2015 SPK value | F S SPK Ref Val | RunNo: 20 SeqNo: 80 %REC | 6882 02273 LowLimit | Units: mg/L HighLimit | ved Metal %RPD | I s RPDLimit | Qual |
| Nickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Aluminum | | ND ND Samp Bate Analysis Result 0.53 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 | 26882 216/2015 SPK value 0.5000 | F S SPK Ref Val 0 | RunNo: 20 SeqNo: 80 <u>%REC</u> 107 | 6882 02273 LowLimit 85 | Units: mg/L HighLimit 115 | | | Qual |
| Nickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Aluminum Barium | | ND ND Samp Bate Analysis <u>Result</u> 0.53 0.50 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.0020 | 26882 216/2015 SPK value 0.5000 0.5000 | F S SPK Ref Val 0 0 | RunNo: 20 SeqNo: 80 <u>%REC</u> 107 99.3 | 6882 02273 LowLimit 85 85 | Units: mg/L HighLimit 115 115 | | | Qual |
| Nickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Aluminum Barium Boron | | ND ND Samp Bate Analysis Result 0.53 0.50 0.53 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.0020 0.040 | 26882 216/2015 SPK value 0.5000 0.5000 0.5000 | F S SPK Ref Val 0 0 0 | RunNo: 20 SeqNo: 80 <u>%REC</u> 107 99.3 105 | 6882 02273 LowLimit 85 85 85 | Units: mg/L HighLimit 115 115 115 | | | Qual |
| Nickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Numinum Barium Barium Baron Cadmium | | ND ND Samp Bate Analysis Result 0.53 0.50 0.53 0.54 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.040 0.040 0.0020 | 26882 216/2015 SPK value 0.5000 0.5000 0.5000 0.5000 | F S SPK Ref Val 0 0 0 0 | RunNo: 20 SeqNo: 80 %REC 107 99.3 105 107 | 6882 02273 LowLimit 85 85 85 85 | Units: mg/L HighLimit 115 115 115 115 | | | Qual |
| Nickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Numinum Barium Barium Boron Cadmium Chromium | | ND ND Samp Bate Analysis <u>Result</u> 0.53 0.50 0.53 0.54 0.51 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.0020 0.040 0.0020 0.0060 | 26882 216/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 | F SPK Ref Val 0 0 0 0 0 0 | RunNo: 20 SeqNo: 80 %REC 107 99.3 105 107 101 | 6882 02273 LowLimit 85 85 85 85 85 | Units: mg/L HighLimit 115 115 115 115 115 115 | | | Qual |
| Nickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Aluminum Barium Boron Cadmium Chromium Cobalt | | ND ND Samp Bate Analysis <u>Result</u> 0.53 0.50 0.53 0.54 0.51 0.52 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.0020 0.0040 0.0020 0.0060 0.0060 | 26882 216/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 | F SPK Ref Val 0 0 0 0 0 0 0 | RunNo: 20 SeqNo: 80 %REC 107 99.3 105 107 101 103 | 6882 02273 LowLimit 85 85 85 85 85 85 | Units: mg/L HighLimit 115 115 115 115 115 115 115 | | | Qual |
| Vickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Aluminum Barium Boron Cadmium Chromium Cobalt Copper | | ND ND Samp Bate Analysis Result 0.53 0.50 0.53 0.54 0.51 0.52 0.49 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.040 0.0020 0.040 0.0060 0.0060 0.0060 | 26882 216/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 | F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 | RunNo: 20 SeqNo: 8 %REC 107 99.3 105 107 101 103 97.4 | 6882 02273 LowLimit 85 85 85 85 85 85 85 85 | Units: mg/L HighLimit 115 115 115 115 115 115 115 115 | | | Qual |
| Vickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Aluminum Barium Baron Cadmium Chromium Cobalt Copper ron | | ND ND Samp Bate Analysis Result 0.53 0.50 0.53 0.54 0.51 0.52 0.52 0.49 0.50 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.040 0.0020 0.040 0.0060 0.0060 0.0060 0.020 | 26882 216/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 | F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 | RunNo: 20 SeqNo: 80 %REC 107 99.3 105 107 101 103 97.4 99.7 | 6882 02273 LowLimit 85 85 85 85 85 85 85 85 | Units: mg/L HighLimit 115 115 115 115 115 115 115 115 115 | | | Qual |
| Vickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Aluminum Barium Barium Baron Cadmium Chromium Cobalt Copper ron Manganese | | ND ND Samp Bate Analysis Result 0.53 0.50 0.53 0.54 0.51 0.52 0.54 0.51 0.52 0.49 0.50 0.48 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.040 0.0020 0.040 0.0060 0.0060 0.0060 0.020 0.020 | 26882 216/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 | F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | RunNo: 20 SeqNo: 80 %REC 107 99.3 105 107 101 103 97.4 99.7 96.4 | 6882 02273 LowLimit 85 85 85 85 85 85 85 85 85 | Units: mg/L HighLimit 115 115 115 115 115 115 115 115 115 11 | | | Qual |
| Vickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Aluminum Barium Barium Barium Cadmium Chromium Cobalt Copper ron Manganese Molybdenum | | ND ND Samp Bate Analysis Result 0.53 0.50 0.53 0.54 0.51 0.52 0.49 0.50 0.48 0.51 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.0020 0.0040 0.0060 0.0060 0.0060 0.0060 0.0060 0.0020 0.0020 0.0020 0.0020 | 26882 276/2015 276/2015 276/2015 276/2000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 | F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | RunNo: 20 SeqNo: 80 %REC 107 99.3 105 107 101 103 97.4 99.7 96.4 102 | 6882 02273 LowLimit 85 85 85 85 85 85 85 85 85 85 85 | Units: mg/L HighLimit 115 115 115 115 115 115 115 115 115 11 | | | Qual |
| Vickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Aluminum Barium Barium Barium Cadmium Chromium Cobalt Copper ron Manganese Molybdenum Vickel | | ND ND Samp Bate Analysis Result 0.53 0.50 0.53 0.54 0.51 0.52 0.49 0.50 0.48 0.51 0.51 0.50 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.0020 0.0060 0.0060 0.0060 0.0060 0.020 0.002 | 26882 216/2015 SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 | F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | RunNo: 20 SeqNo: 80 %REC 107 99.3 105 107 101 103 97.4 99.7 96.4 102 100 | 6882 02273 85 85 85 85 85 85 85 85 85 85 85 85 85 | Units: mg/L HighLimit 115 115 115 115 115 115 115 115 115 11 | | | Qual |
| Vickel Silver Zinc Sample ID Client ID: Prep Date: Analyte Aluminum Barium Barium Barium Cadmium Chromium Cobalt Copper ron Manganese Molybdenum | | ND ND Samp Bate Analysis Result 0.53 0.50 0.53 0.54 0.51 0.52 0.49 0.50 0.48 0.51 | 0.0050 0.010 Type: LC ch ID: R2 Date: 6/ PQL 0.020 0.0020 0.0040 0.0060 0.0060 0.0060 0.0060 0.0060 0.0020 0.0020 0.0020 0.0020 | 26882 276/2015 276/2015 276/2015 276/2000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 | F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | RunNo: 20 SeqNo: 80 %REC 107 99.3 105 107 101 103 97.4 99.7 96.4 102 | 6882 02273 LowLimit 85 85 85 85 85 85 85 85 85 85 85 | Units: mg/L HighLimit 115 115 115 115 115 115 115 115 115 11 | | | Qual |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - P Sample pH Not In Range
 - RL Reporting Detection Limit

| Page | 5 | of 21 |
|-------|---|-------|
| 1 age | 2 | 0121 |

WO#: 1506316

| 22- | Jun- | 15 |
|-----|-------|----|
| 22- | , un- | 10 |

| Client: Project: | | Navajo Refining O Monthly Tempora | | | | | | | | | |
|---------------------|------|--------------------------------------|----------|-----------|-------------|----------|-------------|--------------|------|----------|------|
| Sample ID | LCS | Sam | oType: L | .CS | Tes | tCode: E | PA 200.8: [| Dissolved Me | tals | | |
| Client ID: | LCSW | Bat | ch ID: F | 26876 | F | RunNo: 2 | 6876 | | | | |
| Prep Date: | | Analysis | Date: | 6/16/2015 | 5 | SeqNo: 8 | 02096 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Lead | | 0.013 | 0.00050 | 0.01250 | 0 | 101 | 85 | 115 | | | |
| Selenium | | 0.025 | 0.0010 | | 0 | 99.4 | 85 | 115 | | | |
| Uranium | | 0.013 | 0.00050 | 0 0.01250 | 0 | 102 | 85 | 115 | | | |
| Sample ID | LCS | Sam | Type: L | .CS | Tes | tCode: E | PA 200.8: [| Dissolved Me | tals | | |
| Client ID: | LCSW | Bat | ch ID: R | 26876 | F | RunNo: 2 | 6876 | | | | |
| Prep Date: | | Analysis | Date: | 6/16/2015 | 5 | SeqNo: 8 | 02099 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Lead | | 0.012 | 0.00050 | 0.01250 | 0 | 96.3 | 85 | 115 | | | |
| Selenium | | 0.025 | 0.0010 | 0.02500 | 0 | 100 | 85 | 115 | | | |
| Uranium | | 0.012 | 0.00050 | 0.01250 | 0 | 96.9 | 85 | 115 | | | |
| Sample ID | МВ | Sam | Type: N | IBLK | Tes | tCode: E | PA 200.8: [| Dissolved Me | tals | | |
| Client ID: | PBW | Bat | ch ID: R | 26876 | F | RunNo: 2 | 6876 | | | | |
| Prep Date: | | Analysis | Date: | 6/16/2015 | 5 | SeqNo: 8 | 02100 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Lead | | ND | 0.00050 | 0 | | | | | | | |
| Selenium | | ND | 0.0010 | 0 | | | | | | | |
| Uranium | | ND | 0.00050 |) | | | | | | | |
| Sample ID | MB | Sam | оТуре: N | IBLK | Tes | tCode: E | PA 200.8: [| Dissolved Me | tals | | |
| Client ID: | PBW | Bat | ch ID: R | 26876 | F | RunNo: 2 | 6876 | | | | |
| Prep Date: | | Analysis | Date: | 6/16/2015 | S | SeqNo: 8 | 02101 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Lead | | ND | 0.00050 |) | | | | | | | |
| Selenium | | ND | 0.0010 | D | | | | | | | |
| Uranium | | ND | 0.00050 |) | | | | | | | |
| Sample ID | LCS | Sam | oType: L | .CS | Tes | tCode: E | PA 200.8: [| Dissolved Me | tals | | |
| Client ID: | LCSW | Bat | ch ID: R | 26904 | F | RunNo: 2 | 6904 | | | | |
| Prep Date: | | Analysis | Date: | 6/17/2015 | 5 | SeqNo: 8 | 03447 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Arsenic | | 0.024 | 0.0010 | 0.02500 | 0 | 97.9 | 85 | 115 | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - P Sample pH Not In Range
- RL Reporting Detection Limit

Page 6 of 21

1 450 0 01 21

| WO#: | 1506316 |
|------|-----------|
| | 22-Jun-15 |

| Client: Project: | | Navajo Refining Company Monthly Temporary RO Reject | |
|---------------------|------|--|----|
| Sample ID | LCS | SampType: LCS TestCode: EPA 200.8: Dissolved Metals | |
| Client ID: | LCSW | V Batch ID: R26904 RunNo: 26904 | |
| Prep Date: | | Analysis Date: 6/17/2015 SeqNo: 803448 Units: mg/L | |
| Analyte | | Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua | ıl |
| Arsenic | | 0.024 0.0010 0.02500 0 97.8 85 115 | |
| Sample ID | MB | SampType: MBLK TestCode: EPA 200.8: Dissolved Metals | |
| Client ID: | PBW | Batch ID: R26904 RunNo: 26904 | |
| Prep Date: | | Analysis Date: 6/17/2015 SeqNo: 803449 Units: mg/L | |
| Analyte | | Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua | l. |
| Arsenic | | ND 0.0010 | |
| Sample ID | МВ | SampType: MBLK TestCode: EPA 200.8: Dissolved Metals | |
| Client ID: | PBW | Batch ID: R26904 RunNo: 26904 | |
| Prep Date: | | Analysis Date: 6/17/2015 SeqNo: 803450 Units: mg/L | |
| Analyte | | Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua | d. |
| Arsenic | | ND 0.0010 | |

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

Page 7 of 21

| Client: Project: | | o Refining Company hly Temporary RO Re | eject | | | | | | | |
|---------------------|---------------------|---|-----------|-------------------------------------|-----------|-----------|--------------|------|----------|------|
| Sample ID | | | | TestCode: EPA Method 245.1: Mercury | | | | | | |
| Client ID: | PBW Batch ID: 19630 | | | RunNo: 26705 | | | | | | |
| Prep Date: | 6/9/2015 | Analysis Date: 6/ | 9/2015 | S | SeqNo: 7 | 95807 | Units: mg/L | | | |
| Analyte | | Result PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Vercury | | ND 0.00020 | | | | | | | | |
| Sample ID | _CS-19630 | SampType: LC | S | Tes | tCode: El | PA Method | 245.1: Mercu | ry | | |
| Client ID: | LCSW | Batch ID: 19 | 630 | F | RunNo: 20 | 6705 | | | | |
| Prep Date: | 6/9/2015 | Analysis Date: 6/ | 9/2015 | S | SeqNo: 79 | 95808 | Units: mg/L | | | |
| Analyte | | Result PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Mercury | | 0.0050 0.00020 | 0.005000 | 0 | 100 | 80 | 120 | | | |

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - P Sample pH Not In Range
 - RL Reporting Detection Limit

Page 8 of 21

| WO#: | 1506316 |
|------|-----------|
| | 22 Jun 15 |

22-Jun-15

| Client: Project: | | Navajo Refining Cor Monthly Temporary | · · | | | | | | | | | |
|-----------------------------|-------------------|--|--------------|-----------|------------------------------------|-----------|-----------|---------------|------|----------|------|--|
| Sample ID | MB | SampTy | pe: ME | BLK | TestCode: EPA Method 300.0: Anions | | | | | | | |
| Client ID: | PBW | Batch | D: R2 | 6695 | F | RunNo: 2 | 6695 | | | | | |
| Prep Date: | | Analysis Da | te: 6/ | 8/2015 | S | eqNo: 7 | 95454 | Units: mg/L | | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Fluoride Nitrate+Nitrite | as <mark>N</mark> | ND ND | 0.10 0.20 | | | | | | | | | |
| Sample ID | LCS | SampTy | pe: LC | s | Tes | tCode: El | PA Method | 300.0: Anions | ; | | | |
| Client ID: | LCSW | Batch | D: R2 | 6695 | F | RunNo: 2 | 6695 | | | | | |
| Prep Date: | | Analysis Da | te: 6/ | 8/2015 | S | eqNo: 7 | 95455 | Units: mg/L | | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Fluoride | 0.000 | 0.48 | 0.10 | 0.5000 | 0 | 95.8 | 90 | 110 | | | | |
| Nitrate+Nitrite | as N | 3.5 | 0.20 | 3.500 | 0 | 100 | 90 | 110 | | | | |
| Sample ID | MB | SampTy | pe: ME | BLK | Tes | tCode: El | PA Method | 300.0: Anions | 5 | | | |
| Client ID: | PBW | Batch | D: R2 | 6721 | RunNo: 26721 | | | | | | | |
| Prep Date: | | Analysis Da | te: 6/ | 9/2015 | S | eqNo: 7 | 96475 | Units: mg/L | | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Chloride | | ND | 0.50 | | | | | | | | | |
| Sulfate | | ND | 0.50 | | | | | | | | | |
| Sample ID | LCS | SampTy | pe: LC | s | Tes | tCode: El | PA Method | 300.0: Anions | 5 | | | |
| Client ID: | LCSW | Batch | D: R2 | 6721 | R | RunNo: 2 | 6721 | | | | | |
| Prep Date: | | Analysis Da | te: 6/ | 9/2015 | S | eqNo: 7 | 96476 | Units: mg/L | | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Chloride | | 5.1 | 0.50 | 5.000 | 0 | 103 | 90 | 110 | | | | |
| Sulfate | | 11 | 0.50 | 10.00 | 0 | 106 | 90 | 110 | | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- Not Detected at the Reporting Limit ND
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

- Page 9 of 21

| Client: Project: | | o Refining Co hly Temporary | | eject | | | | | | | |
|---------------------|---|--------------------------------|---------|--------------------------------------|-------------|---------------------------|-----------|---------------|------|----------|------|
| Sample ID | MB-19674 SampType: MBLK PBW Batch ID: 19674 | | | TestCode: EPA Method 8011/504.1: EDB | | | | | | | |
| Client ID: | PBW Batch ID: 19674 | | | RunNo: 26780 | | | | | | | |
| Prep Date: | 6/11/2015 Analysis Date: 6/11/2015 | | | | S | SeqNo: 798570 Units: µg/L | | | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 1,2-Dibromoetha | ane | ND | 0.010 | | | | | | | | |
| Sample ID | LCS-19674 | SampT | ype: LC | S | Tes | tCode: E | PA Method | 8011/504.1: E | DB | | |
| Client ID: | LCSW | Batch | ID: 19 | 674 | F | RunNo: 2 | 6780 | | | | |
| Prep Date: | 6/11/2015 | Analysis D | ate: 6/ | 11/2015 | S | SeqNo: 7 | 98571 | Units: µg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 1,2-Dibromoetha | ane | 0.11 | 0.010 | 0.1000 | 0 | 109 | 70 | 130 | | | |

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - Reporting Detection Limit RL

Page 10 of 21

| WO#: | 1506316 |
|------|-----------|
| | 22-Jun-15 |

| | Refining Co y Temporary | - · | | | | | | | | |
|-----------------------------------|----------------------------|----------|--|--|----------|----------|-------------|------|----------|------|
| Sample ID MB-19616 SampType: MBLK | | | TestCode: EPA Method 8015D: Diesel Range | | | | | | | |
| Client ID: PBW | Batch ID: 19616 | | F | RunNo: 26673 | | | | | | |
| Prep Date: 6/8/2015 | Analysis Date: 6/9/2015 | | S | SeqNo: 796030 Uni | | | g/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 1.0 | | | | | | | | |
| Motor Oil Range Organics (MRO) | ND | 5.0 | | | | | | | | |
| Surr: DNOP | 0.94 | | 1.000 | | 94.1 | 76.5 | 150 | | | |
| Sample ID LCS-19616 | SampT | ype: LC | S | TestCode: EPA Method 8015D: Diesel Range | | | | | | |
| Client ID: LCSW | Batch | h ID: 19 | 616 | F | RunNo: 2 | 6673 | | | | |
| Prep Date: 6/8/2015 | Analysis D |)ate: 6/ | 9/2015 | S | SeqNo: 7 | 96031 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 5.0 | 1.0 | 5.000 | 0 | 99.3 | 60.1 | 156 | | | |
| Surr: DNOP | 0.45 | | 0.5000 | | 89.8 | 76.5 | 150 | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - P Sample pH Not In Range
 - RL Reporting Detection Limit

Page 11 of 21

| WO#: | 1506316 |
|------|-----------|
| | 22-Jun-15 |

| | Refining Co Temporar | | | | | | | | | | |
|-------------------------------|-------------------------|--------------------------|-----------|--|--|----------|-------------|------|----------|------|--|
| Sample ID 5ML RB | Samp | Type: ME | BLK | TestCode: EPA Method 8015D: Gasoline Range | | | | | | | |
| Client ID: PBW | Batc | Batch ID: R26753 | | | RunNo: 26753 | | | | | | |
| Prep Date: | Analysis D | Analysis Date: 6/10/2015 | | | eqNo: 7 | 97263 | Units: mg/L | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Gasoline Range Organics (GRO) | ND | 0.050 | | | | | | | | | |
| Surr: BFB | 18 | | 20.00 | | 88.9 | 57.8 | 137 | | | | |
| Sample ID 2.5UG GRO LCS | Samp | Type: LC | s | Tes | TestCode: EPA Method 8015D: Gasoline Range | | | | | | |
| Client ID: LCSW | Batc | h ID: R2 | 6753 | F | RunNo: 2 | 6753 | | | | | |
| Prep Date: | Analysis E | Date: 6/ | 10/2015 | S | eqNo: 7 | 97264 | Units: mg/L | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Gasoline Range Organics (GRO) | 0.49 | 0.050 | 0.5000 | 0 | 98.5 | 80 | 120 | | | | |
| Surr: BFB | 21 | | 20.00 | | 103 | 57.8 | 137 | | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
 - Р Sample pH Not In Range
 - RL Reporting Detection Limit

Page 12 of 21

| Hall Environmen | nvironmental Analysis Laboratory, Inc. | | | | | | | | |
|---|--|-----------|-------------|----------|-----------|-------------|------|----------|------|
| state and the second second second second second second second second second second second second second second | Refining Company y Temporary RO Re | ject | | | | | | | |
| Sample ID MB-19626 | SampType: MB | LK | Test | Code: El | PA Method | 8082: PCB's | | | |
| Client ID: PBW | Batch ID: 196 | 26 | R | unNo: 2 | 6808 | | | | |
| Prep Date: 6/9/2015 | Analysis Date: 6/1 | 2/2015 | S | eqNo: 7 | 99539 | Units: µg/L | | | |
| Analyte | Result PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aroclor 1016 | ND 1.0 | | | | | | | | |
| Aroclor 1221 | ND 1.0 | | | | | | | | |
| Aroclor 1232 | ND 1.0 | | | | | | | | |
| Aroclor 1242 | ND 1.0 | | | | | | | | |
| Aroclor 1248 | ND 1.0 | | | | | | | | |
| Aroclor 1254 | ND 1.0 | | | | | | | | |
| Aroclor 1260 | ND 1.0 | | | | | | | | |
| Surr: Decachlorobiphenyl | 1.8 | 2.500 | | 72.8 | 44.5 | 110 | | | |
| Surr: Tetrachloro-m-xylene | 1.6 | 2.500 | | 63.2 | 31.8 | 95.7 | | | |
| Sample ID MB-19672 | SampType: MB | LK | Test | Code: El | PA Method | 8082: PCB's | | | |
| Client ID: PBW | PBW Batch ID: 19672 | | | | 6808 | | | | |
| Prep Date: 6/11/2015 | Analysis Date: 6/1 | 2/2015 | S | eqNo: 7 | 99540 | Units: %REC | 0 | | |
| Analyte | Result PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: Decachlorobiphenyl | 2.3 | 2.500 | | 92.0 | 44.5 | 110 | | | |
| Surr: Tetrachloro-m-xylene | 1.9 | 2.500 | | 75.2 | 31.8 | 95.7 | | | |
| Sample ID LCS-19672 | SampType: LCS | 6 | Test | Code: El | PA Method | 8082: PCB's | | | |
| Client ID: LCSW | Batch ID: 196 | 72 | R | unNo: 2 | 6808 | | | | |
| Prep Date: 6/11/2015 | Analysis Date: 6/1 | 2/2015 | s | eqNo: 7 | 99541 | Units: %REC | 0 | | |
| Analyte | Result PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: Decachlorobiphenyl | 2.0 | 2.500 | | 82.0 | 44.5 | 110 | | | |
| Surr: Tetrachloro-m-xylene | 1.8 | 2.500 | | 70.4 | 31.8 | 95.7 | | | |
| Sample ID LCSD-19626 | SampType: LCS | SD | Test | Code: El | PA Method | 8082: PCB's | | | |
| Client ID: LCSS02 | Batch ID: 196 | 26 | R | unNo: 2 | 6808 | | | | |
| Prep Date: 6/9/2015 | Analysis Date: 6/1 | 2/2015 | S | eqNo: 7 | 99543 | Units: µg/L | | | |
| Analyte | Result PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aroclor 1016 | 3.1 1.0 | 5.000 | 0 | 61.8 | 22.6 | 127 | 4.98 | 26.9 | |
| Aroclor 1260 | 4.7 1.0 | 5.000 | 0 | 94.3 | 20.4 | 122 | 8.96 | 29.1 | |
| Surr: Decachlorobiphenyl | 1.7 | 2.500 | | 69.2 | 44.5 | 110 | 0 | 0 | |
| Surr: Tetrachloro-m-xylene | 1.5 | 2.500 | | 58.4 | 31.8 | 95.7 | 0 | 0 | |

* Value exceeds Maximum Contaminant Level.

QC SUMMARY REPORT

- E Value above quantitation range
- Analyte detected below quantitation limits J
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Р Sample pH Not In Range
- RL Reporting Detection Limit

Page 13 of 21

1506316 WO#:

WO#: 1506316 22-Jun-15

Client: Navajo Refining Company **Project:** Monthly Temporary RO Reject

| Sample ID LCS-19626 | SW Batch ID: 19626 | | | Tes | tCode: El | PA Method | 8082: PCB's | | | |
|----------------------------|--------------------|-----|-----------|--------------|----------------------|-----------|-------------|------|----------|------|
| Client ID: LCSW | | | | RunNo: 26808 | | | | | | |
| Prep Date: 6/9/2015 | | | | S | SeqNo: 799548 Units: | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aroclor 1016 | 2.9 | 1.0 | 5.000 | 0 | 58.8 | 22.6 | 127 | | | |
| Aroclor 1260 | 5.2 | 1.0 | 5.000 | 0 | 103 | 20.4 | 122 | | | |
| Surr: Decachlorobiphenyl | 1.9 | | 2.500 | | 74.8 | 44.5 | 110 | | | |
| Surr: Tetrachloro-m-xylene | 1.7 | | 2.500 | | 66.4 | 31.8 | 95.7 | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits J
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Р Sample pH Not In Range
 - **Reporting Detection Limit** RL

Page 14 of 21