

**GW – 001**

**GW REMEDIATION  
& MONITORING  
ANNUAL REPORT  
(2 of 4)**

**2016**

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604889**Date Reported: **5/2/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW 3+85**Project:** North Boundry Barrier**Collection Date:** 4/19/2016 11:50:00 AM**Lab ID:** 1604889-002**Matrix:** AQUEOUS**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>  |
| Diesel Range Organics (DRO)                  | 56     | 2.0      |      | mg/L  | 10 | 4/26/2016 1:15:08 PM |
| Motor Oil Range Organics (MRO)               | ND     | 25       |      | mg/L  | 10 | 4/26/2016 1:15:08 PM |
| Surr: DNOP                                   | 0      | 63.2-161 | S    | %Rec  | 10 | 4/26/2016 1:15:08 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>  |
| Gasoline Range Organics (GRO)                | 14     | 0.50     |      | mg/L  | 10 | 4/21/2016 3:26:44 PM |
| Surr: BFB                                    | 412    | 66.4-120 | S    | %Rec  | 10 | 4/21/2016 3:26:44 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 10       | D    | µg/L  | 10 | 4/26/2016 4:34:33 AM |
| Toluene                                      | ND     | 10       | D    | µg/L  | 10 | 4/26/2016 4:34:33 AM |
| Ethylbenzene                                 | 11     | 10       | D    | µg/L  | 10 | 4/26/2016 4:34:33 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 10       | D    | µg/L  | 10 | 4/26/2016 4:34:33 AM |
| Xylenes, Total                               | ND     | 15       | D    | µg/L  | 10 | 4/26/2016 4:34:33 AM |
| Surr: 1,2-Dichloroethane-d4                  | 98.6   | 70-130   | D    | %Rec  | 10 | 4/26/2016 4:34:33 AM |
| Surr: 4-Bromofluorobenzene                   | 104    | 70-130   | D    | %Rec  | 10 | 4/26/2016 4:34:33 AM |
| Surr: Dibromofluoromethane                   | 94.2   | 70-130   | D    | %Rec  | 10 | 4/26/2016 4:34:33 AM |
| Surr: Toluene-d8                             | 94.6   | 70-130   | D    | %Rec  | 10 | 4/26/2016 4:34:33 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604889**Date Reported: **5/2/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW 16+60**Project:** North Boundry Barrier**Collection Date:** 4/19/2016 1:15:00 PM**Lab ID:** 1604889-003**Matrix:** AQUEOUS**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>  |
| Diesel Range Organics (DRO)                  | 28     | 0.20     |      | mg/L  | 1  | 4/25/2016 2:48:14 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/25/2016 2:48:14 PM |
| Surr: DNOP                                   | 93.7   | 63.2-161 |      | %Rec  | 1  | 4/25/2016 2:48:14 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>  |
| Gasoline Range Organics (GRO)                | 1.8    | 0.050    |      | mg/L  | 1  | 4/21/2016 5:04:48 PM |
| Surr: BFB                                    | 937    | 66.4-120 | S    | %Rec  | 1  | 4/21/2016 5:04:48 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 10       | D    | µg/L  | 10 | 4/26/2016 5:03:22 AM |
| Toluene                                      | ND     | 10       | D    | µg/L  | 10 | 4/26/2016 5:03:22 AM |
| Ethylbenzene                                 | ND     | 10       | D    | µg/L  | 10 | 4/26/2016 5:03:22 AM |
| Methyl tert-butyl ether (MTBE)               | 280    | 10       | D    | µg/L  | 10 | 4/26/2016 5:03:22 AM |
| Xylenes, Total                               | ND     | 15       | D    | µg/L  | 10 | 4/26/2016 5:03:22 AM |
| Surr: 1,2-Dichloroethane-d4                  | 94.6   | 70-130   | D    | %Rec  | 10 | 4/26/2016 5:03:22 AM |
| Surr: 4-Bromofluorobenzene                   | 96.4   | 70-130   | D    | %Rec  | 10 | 4/26/2016 5:03:22 AM |
| Surr: Dibromofluoromethane                   | 90.7   | 70-130   | D    | %Rec  | 10 | 4/26/2016 5:03:22 AM |
| Surr: Toluene-d8                             | 97.5   | 70-130   | D    | %Rec  | 10 | 4/26/2016 5:03:22 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604889**Date Reported: **5/2/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW 22+00**Project:** North Boundry Barrier**Collection Date:** 4/19/2016 2:30:00 PM**Lab ID:** 1604889-004**Matrix:** AQUEOUS**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>   |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/25/2016 3:09:42 PM  |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/25/2016 3:09:42 PM  |
| Surr: DNOP                                   | 90.2   | 63.2-161 |      | %Rec  | 1  | 4/25/2016 3:09:42 PM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>   |
| Gasoline Range Organics (GRO)                | ND     | 0.050    |      | mg/L  | 1  | 4/22/2016 12:49:36 PM |
| Surr: BFB                                    | 82.7   | 66.4-120 |      | %Rec  | 1  | 4/22/2016 12:49:36 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/26/2016 5:32:15 AM  |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/26/2016 5:32:15 AM  |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/26/2016 5:32:15 AM  |
| Methyl tert-butyl ether (MTBE)               | 1.8    | 1.0      |      | µg/L  | 1  | 4/26/2016 5:32:15 AM  |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/26/2016 5:32:15 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   |      | %Rec  | 1  | 4/26/2016 5:32:15 AM  |
| Surr: 4-Bromofluorobenzene                   | 99.9   | 70-130   |      | %Rec  | 1  | 4/26/2016 5:32:15 AM  |
| Surr: Dibromofluoromethane                   | 101    | 70-130   |      | %Rec  | 1  | 4/26/2016 5:32:15 AM  |
| Surr: Toluene-d8                             | 102    | 70-130   |      | %Rec  | 1  | 4/26/2016 5:32:15 AM  |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604889**Date Reported: **5/2/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW-23+10**Project:** North Boundry Barrier**Collection Date:** 4/19/2016 2:45:00 PM**Lab ID:** 1604889-005**Matrix:** AQUEOUS**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>  |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/25/2016 3:31:17 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/25/2016 3:31:17 PM |
| Surr: DNOP                                   | 90.9   | 63.2-161 |      | %Rec  | 1  | 4/25/2016 3:31:17 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>  |
| Gasoline Range Organics (GRO)                | 0.13   | 0.050    |      | mg/L  | 1  | 4/22/2016 1:14:03 PM |
| Surr: BFB                                    | 94.4   | 66.4-120 |      | %Rec  | 1  | 4/22/2016 1:14:03 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/26/2016 6:01:07 AM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/26/2016 6:01:07 AM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/26/2016 6:01:07 AM |
| Methyl tert-butyl ether (MTBE)               | 1.2    | 1.0      |      | µg/L  | 1  | 4/26/2016 6:01:07 AM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/26/2016 6:01:07 AM |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   |      | %Rec  | 1  | 4/26/2016 6:01:07 AM |
| Surr: 4-Bromofluorobenzene                   | 98.1   | 70-130   |      | %Rec  | 1  | 4/26/2016 6:01:07 AM |
| Surr: Dibromofluoromethane                   | 103    | 70-130   |      | %Rec  | 1  | 4/26/2016 6:01:07 AM |
| Surr: Toluene-d8                             | 97.2   | 70-130   |      | %Rec  | 1  | 4/26/2016 6:01:07 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604889**Date Reported: **5/2/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW-23+90**Project:** North Boundry Barrier**Collection Date:** 4/19/2016 3:00:00 PM**Lab ID:** 1604889-006**Matrix:** AQUEOUS**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>  |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/25/2016 4:09:51 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/25/2016 4:09:51 PM |
| Surr: DNOP                                   | 92.6   | 63.2-161 |      | %Rec  | 1  | 4/25/2016 4:09:51 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>  |
| Gasoline Range Organics (GRO)                | ND     | 0.050    |      | mg/L  | 1  | 4/21/2016 6:18:18 PM |
| Surr: BFB                                    | 88.0   | 66.4-120 |      | %Rec  | 1  | 4/21/2016 6:18:18 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/26/2016 6:29:52 AM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/26/2016 6:29:52 AM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/26/2016 6:29:52 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/26/2016 6:29:52 AM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/26/2016 6:29:52 AM |
| Surr: 1,2-Dichloroethane-d4                  | 97.7   | 70-130   |      | %Rec  | 1  | 4/26/2016 6:29:52 AM |
| Surr: 4-Bromofluorobenzene                   | 101    | 70-130   |      | %Rec  | 1  | 4/26/2016 6:29:52 AM |
| Surr: Dibromofluoromethane                   | 83.6   | 70-130   |      | %Rec  | 1  | 4/26/2016 6:29:52 AM |
| Surr: Toluene-d8                             | 94.7   | 70-130   |      | %Rec  | 1  | 4/26/2016 6:29:52 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1604889

Date Reported: 5/2/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Equipment Blank

**Project:** North Boundry Barrier

**Collection Date:** 4/18/2016 3:30:00 PM

**Lab ID:** 1604889-007

**Matrix:** AQUEOUS

**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 6:58:39 AM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 6:58:39 AM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 6:58:39 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 6:58:39 AM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/26/2016 6:58:39 AM |
| Surr: 1,2-Dichloroethane-d4                  | 100    | 70-130 |      | %Rec  | 1  | 4/26/2016 6:58:39 AM |
| Surr: 4-Bromofluorobenzene                   | 101    | 70-130 |      | %Rec  | 1  | 4/26/2016 6:58:39 AM |
| Surr: Dibromofluoromethane                   | 92.8   | 70-130 |      | %Rec  | 1  | 4/26/2016 6:58:39 AM |
| Surr: Toluene-d8                             | 97.3   | 70-130 |      | %Rec  | 1  | 4/26/2016 6:58:39 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1604889

Date Reported: 5/2/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Trip Blank

**Project:** North Boundry Barrier

**Collection Date:**

**Lab ID:** 1604889-008

**Matrix:** AQUEOUS

**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:27:34 AM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:27:34 AM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:27:34 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:27:34 AM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/26/2016 7:27:34 AM |
| Surr: 1,2-Dichloroethane-d4                  | 99.4   | 70-130 |      | %Rec  | 1  | 4/26/2016 7:27:34 AM |
| Surr: 4-Bromofluorobenzene                   | 99.2   | 70-130 |      | %Rec  | 1  | 4/26/2016 7:27:34 AM |
| Surr: Dibromofluoromethane                   | 88.1   | 70-130 |      | %Rec  | 1  | 4/26/2016 7:27:34 AM |
| Surr: Toluene-d8                             | 98.7   | 70-130 |      | %Rec  | 1  | 4/26/2016 7:27:34 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604889

02-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundry Barrier

|                             |                |                          |           |             |                                          |          |             |      |          |      |
|-----------------------------|----------------|--------------------------|-----------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1604889-001BMS | SampType: MS             |           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | CW- 0+60       | Batch ID: 24970          |           |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                  | 4/25/2016      | Analysis Date: 4/25/2016 |           |             | SeqNo: 1039858                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result         | PQL                      | SPK value | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.2            | 0.20                     | 2.500     | 0.7253      | 101                                      | 73.3     | 174         |      |          |      |
| Surr: DNOP                  | 0.23           |                          | 0.2500    |             | 91.9                                     | 63.2     | 161         |      |          |      |

|                             |                 |      |                |             |      |           |                                |      |          |      |  |
|-----------------------------|-----------------|------|----------------|-------------|------|-----------|--------------------------------|------|----------|------|--|
| Sample ID                   | 1604889-001BMSD |      | SampType:      | MSD         |      | TestCode: | EPA Method 8015D: Diesel Range |      |          |      |  |
| Client ID:                  | CW- 0+60        |      | Batch ID:      | 24970       |      | RunNo:    | 33768                          |      |          |      |  |
| Prep Date:                  | 4/25/2016       |      | Analysis Date: | 4/25/2016   |      | SeqNo:    | 1039859                        |      | Units:   | mg/L |  |
| Analyte                     | Result          | PQL  | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                      | %RPD | RPDLimit | Qual |  |
| Diesel Range Organics (DRO) | 3.3             | 0.20 | 2.500          | 0.7253      | 103  | 73.3      | 174                            | 1.81 | 20       |      |  |
| Surr: DNOP                  | 0.23            |      | 0.2500         |             | 92.0 | 63.2      | 161                            | 0    | 0        |      |  |

|                             |           |                          |           |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|--------------------------|-----------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-24970 | SampType: LCS            |           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      | Batch ID: 24970          |           |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                  | 4/25/2016 | Analysis Date: 4/25/2016 |           |             | SeqNo: 1039867                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL                      | SPK value | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.8       | 0.20                     | 2.500     | 0           | 153                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.31      |                          | 0.2500    |             | 124                                      | 63.2     | 161         |      |          |      |

|                                |           |                          |           |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|--------------------------|-----------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-24970  | SampType: MBLK           |           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       | Batch ID: 24970          |           |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                     | 4/25/2016 | Analysis Date: 4/25/2016 |           |             | SeqNo: 1039868                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL                      | SPK value | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20                     |           |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5                      |           |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.56      |                          | 0.5000    |             | 112                                      | 63.2     | 161         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604889

02-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundry Barrier

|                               |        |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 5ML RB | SampType:      | MBLK      | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | PBW    | Batch ID:      | A33706    | RunNo:      | 33706                            |          |           |      |          |      |
| Prep Date:                    |        | Analysis Date: | 4/21/2016 | SeqNo:      | 1038287                          | 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                     | 17     |                | 20.00     |             | 84.6                             | 66.4     | 120       |      |          |      |

|                               |               |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 2.5UG GRO LCS | SampType:      | LCS       | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | LCSW          | Batch ID:      | A33706    | RunNo:      | 33706                            |          |           |      |          |      |
| Prep Date:                    |               | Analysis Date: | 4/21/2016 | SeqNo:      | 1038288                          | Units:   | mg/L      |      |          |      |
| Analyte                       | Result        | PQL            | SPK value | SPK Ref Val | %REC                             | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.47          | 0.050          | 0.5000    | 0           | 93.5                             | 80       | 120       |      |          |      |
| Surr: BFB                     | 20            |                | 20.00     |             | 98.8                             | 66.4     | 120       |      |          |      |

|                               |                |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|----------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 1604889-002AMS | SampType:      | MS        | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | OW 3+85        | Batch ID:      | A33706    | RunNo:      | 33706                            |          |           |      |          |      |
| Prep Date:                    |                | Analysis Date: | 4/21/2016 | SeqNo:      | 1038290                          | Units:   | mg/L      |      |          |      |
| Analyte                       | Result         | PQL            | SPK value | SPK Ref Val | %REC                             | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 20             | 0.50           | 5.000     | 14.32       | 119                              | 70       | 130       |      |          |      |
| Surr: BFB                     | 860            |                | 200.0     |             | 431                              | 66.4     | 120       |      |          | S    |

|                               |                 |                |           |             |                                  |          |           |       |          |      |
|-------------------------------|-----------------|----------------|-----------|-------------|----------------------------------|----------|-----------|-------|----------|------|
| Sample ID                     | 1604889-002AMSD | SampType:      | MSD       | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |       |          |      |
| Client ID:                    | OW 3+85         | Batch ID:      | A33706    | RunNo:      | 33706                            |          |           |       |          |      |
| Prep Date:                    |                 | Analysis Date: | 4/21/2016 | SeqNo:      | 1038291                          | Units:   | mg/L      |       |          |      |
| Analyte                       | Result          | PQL            | SPK value | SPK Ref Val | %REC                             | LowLimit | HighLimit | %RPD  | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 20              | 0.50           | 5.000     | 14.32       | 121                              | 70       | 130       | 0.581 | 20       |      |
| Surr: BFB                     | 870             |                | 200.0     |             | 433                              | 66.4     | 120       | 0     | 0        | S    |

|                               |        |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 5ML RB | SampType:      | MBLK      | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | PBW    | Batch ID:      | R33733    | RunNo:      | 33733                            |          |           |      |          |      |
| Prep Date:                    |        | Analysis Date: | 4/22/2016 | SeqNo:      | 1039011                          | 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     |             | 90.1                             | 66.4     | 120       |      |          |      |

|                               |               |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 2.5UG GRO LCS | SampType:      | LCS       | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | LCSW          | Batch ID:      | R33733    | RunNo:      | 33733                            |          |           |      |          |      |
| Prep Date:                    |               | Analysis Date: | 4/22/2016 | SeqNo:      | 1039012                          | 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     |             | 90.1                             | 66.4     | 120       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604889

02-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundry Barrier

|                               |               |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 2.5UG GRO LCS | SampType:      | LCS       | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | LCSW          | Batch ID:      | R33733    | RunNo:      | 33733                            |          |           |      |          |      |
| Prep Date:                    |               | Analysis Date: | 4/22/2016 | SeqNo:      | 1039012                          | Units:   | mg/L      |      |          |      |
| Analyte                       | Result        | PQL            | SPK value | SPK Ref Val | %REC                             | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.46          | 0.050          | 0.5000    | 0           | 92.4                             | 80       | 120       |      |          |      |
| Surr: BFB                     | 20            |                | 20.00     |             | 102                              | 66.4     | 120       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604889

02-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundry Barrier

|                             |            |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs2 |     | SampType: LCS            |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | LCSW       |     | Batch ID: R33772         |             | RunNo: 33772                                    |          |             |      |          |      |
| Prep Date:                  |            |     | Analysis Date: 4/26/2016 |             | SeqNo: 1040456                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result     | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 20         | 1.0 | 20.00                    | 0           | 99.7                                            | 70       | 130         |      |          |      |
| Toluene                     | 20         | 1.0 | 20.00                    | 0           | 98.7                                            | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10         |     | 10.00                    |             | 103                                             | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10         |     | 10.00                    |             | 101                                             | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 10         |     | 10.00                    |             | 103                                             | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.8        |     | 10.00                    |             | 98.5                                            | 70       | 130         |      |          |      |

|                                |        |                          |           |             |                                                 |          |             |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | rb3    | SampType: MBLK           |           |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: R33772         |           |             | RunNo: 33772                                    |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 4/26/2016 |           |             | SeqNo: 1040457                                  |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Xylenes, Total                 | ND     | 1.5                      |           |             |                                                 |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.5    |                          | 10.00     |             | 94.7                                            | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene     | 10     |                          | 10.00     |             | 103                                             | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane     | 9.2    |                          | 10.00     |             | 92.2                                            | 70       | 130         |      |          |      |
| Surr: Toluene-d8               | 9.3    |                          | 10.00     |             | 92.8                                            | 70       | 130         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified





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

## Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1604889

RcptNo: 1

Received by/date: AT 04/20/16

Logged By: Anne Thorne 4/20/2016 7:30:00 AM

Completed By: Anne Thorne 4/20/2016

Reviewed By: IO 04/20/16

*Anne Thorne*

*Anne Thorne*

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.4                     | Good      | Yes         |         |           |           |















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

May 04, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: North Boundary Barrier

OrderNo.: 1604932

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/20/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604932**Date Reported: **5/4/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW 1+50**Project:** North Boundary Barrier**Collection Date:** 4/19/2016 10:30:00 AM**Lab ID:** 1604932-001**Matrix:** AQUEOUS**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>  |
| Diesel Range Organics (DRO)                  | 2.5    | 0.20     |      | mg/L  | 1  | 4/25/2016 4:31:41 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/25/2016 4:31:41 PM |
| Surr: DNOP                                   | 95.2   | 63.2-161 |      | %Rec  | 1  | 4/25/2016 4:31:41 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>  |
| Gasoline Range Organics (GRO)                | 3.2    | 0.25     |      | mg/L  | 5  | 4/26/2016 9:57:07 AM |
| Surr: BFB                                    | 424    | 66.4-120 | S    | %Rec  | 5  | 4/26/2016 9:57:07 AM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 5.0      |      | µg/L  | 5  | 4/26/2016 6:28:31 PM |
| Toluene                                      | ND     | 5.0      |      | µg/L  | 5  | 4/26/2016 6:28:31 PM |
| Ethylbenzene                                 | ND     | 5.0      |      | µg/L  | 5  | 4/26/2016 6:28:31 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 5.0      |      | µg/L  | 5  | 4/26/2016 6:28:31 PM |
| Xylenes, Total                               | ND     | 7.5      |      | µg/L  | 5  | 4/26/2016 6:28:31 PM |
| Surr: 1,2-Dichloroethane-d4                  | 94.3   | 70-130   |      | %Rec  | 5  | 4/26/2016 6:28:31 PM |
| Surr: 4-Bromofluorobenzene                   | 95.2   | 70-130   |      | %Rec  | 5  | 4/26/2016 6:28:31 PM |
| Surr: Dibromofluoromethane                   | 86.2   | 70-130   |      | %Rec  | 5  | 4/26/2016 6:28:31 PM |
| Surr: Toluene-d8                             | 98.8   | 70-130   |      | %Rec  | 5  | 4/26/2016 6:28:31 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604932**Date Reported: **5/4/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW 11+15**Project:** North Boundary Barrier**Collection Date:** 4/19/2016 12:45:00 PM**Lab ID:** 1604932-002**Matrix:** AQUEOUS**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF  | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|-----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |     | Analyst: <b>KJH</b>   |
| Diesel Range Organics (DRO)                  | 110    | 2.0      |      | mg/L  | 10  | 4/26/2016 1:36:39 PM  |
| Motor Oil Range Organics (MRO)               | ND     | 25       |      | mg/L  | 10  | 4/26/2016 1:36:39 PM  |
| Surr: DNOP                                   | 0      | 63.2-161 | S    | %Rec  | 10  | 4/26/2016 1:36:39 PM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |     | Analyst: <b>NSB</b>   |
| Gasoline Range Organics (GRO)                | 14     | 0.50     |      | mg/L  | 10  | 4/26/2016 11:10:40 AM |
| Surr: BFB                                    | 131    | 66.4-120 | S    | %Rec  | 10  | 4/26/2016 11:10:40 AM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |     | Analyst: <b>AG</b>    |
| Benzene                                      | 3800   | 100      |      | µg/L  | 100 | 4/26/2016 8:25:13 AM  |
| Toluene                                      | ND     | 20       |      | µg/L  | 20  | 4/26/2016 6:57:11 PM  |
| Ethylbenzene                                 | ND     | 20       |      | µg/L  | 20  | 4/26/2016 6:57:11 PM  |
| Methyl tert-butyl ether (MTBE)               | 220    | 20       |      | µg/L  | 20  | 4/26/2016 6:57:11 PM  |
| Xylenes, Total                               | ND     | 30       |      | µg/L  | 20  | 4/26/2016 6:57:11 PM  |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   |      | %Rec  | 20  | 4/26/2016 6:57:11 PM  |
| Surr: 4-Bromofluorobenzene                   | 97.4   | 70-130   |      | %Rec  | 20  | 4/26/2016 6:57:11 PM  |
| Surr: Dibromofluoromethane                   | 97.5   | 70-130   |      | %Rec  | 20  | 4/26/2016 6:57:11 PM  |
| Surr: Toluene-d8                             | 103    | 70-130   |      | %Rec  | 20  | 4/26/2016 6:57:11 PM  |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1604932

Date Reported: 5/4/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Equipment Rinsate

**Project:** North Boundary Barrier

**Collection Date:** 4/18/2016 3:30:00 PM

**Lab ID:** 1604932-003

**Matrix:** AQUEOUS

**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:26:00 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:26:00 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:26:00 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:26:00 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/26/2016 7:26:00 PM |
| Surr: 1,2-Dichloroethane-d4                  | 94.4   | 70-130 |      | %Rec  | 1  | 4/26/2016 7:26:00 PM |
| Surr: 4-Bromofluorobenzene                   | 99.4   | 70-130 |      | %Rec  | 1  | 4/26/2016 7:26:00 PM |
| Surr: Dibromofluoromethane                   | 83.3   | 70-130 |      | %Rec  | 1  | 4/26/2016 7:26:00 PM |
| Surr: Toluene-d8                             | 100    | 70-130 |      | %Rec  | 1  | 4/26/2016 7:26:00 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1604932

Date Reported: 5/4/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** TRIP BLANK

**Project:** North Boundary Barrier

**Collection Date:**

**Lab ID:** 1604932-004

**Matrix:** TRIP BLANK

**Received Date:** 4/20/2016 7:30:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:54:53 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:54:53 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:54:53 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 7:54:53 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/26/2016 7:54:53 PM |
| Surr: 1,2-Dichloroethane-d4                  | 96.1   | 70-130 |      | %Rec  | 1  | 4/26/2016 7:54:53 PM |
| Surr: 4-Bromofluorobenzene                   | 99.9   | 70-130 |      | %Rec  | 1  | 4/26/2016 7:54:53 PM |
| Surr: Dibromofluoromethane                   | 86.5   | 70-130 |      | %Rec  | 1  | 4/26/2016 7:54:53 PM |
| Surr: Toluene-d8                             | 101    | 70-130 |      | %Rec  | 1  | 4/26/2016 7:54:53 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604932

04-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier

|                             |           |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-24970 |      | SampType: LCS            |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |      | Batch ID: 24970          |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                  | 4/25/2016 |      | Analysis Date: 4/25/2016 |             | SeqNo: 1039867                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.8       | 0.20 | 2.500                    | 0           | 153                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.31      |      | 0.2500                   |             | 124                                      | 63.2     | 161         |      |          |      |

|                                |           |                          |           |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|--------------------------|-----------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-24970  | SampType: MBLK           |           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       | Batch ID: 24970          |           |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                     | 4/25/2016 | Analysis Date: 4/25/2016 |           |             | SeqNo: 1039868                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL                      | SPK value | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20                     |           |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5                      |           |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.56      |                          | 0.5000    |             | 112                                      | 63.2     | 161         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604932

04-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier

|                               |        |       |                          |             |                                            |          |             |      |          |      |
|-------------------------------|--------|-------|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 5ML RB |       | SampType: MBLK           |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | PBW    |       | Batch ID: A33804         |             | RunNo: 33804                               |          |             |      |          |      |
| Prep Date:                    |        |       | Analysis Date: 4/26/2016 |             | SeqNo: 1041252                             |          | 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                    |             | 89.9                                       | 66.4     | 120         |      |          |      |

|                               |               |       |                          |             |                                            |          |             |      |          |      |
|-------------------------------|---------------|-------|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 2.5UG GRO LCS |       | SampType: LCS            |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | LCSW          |       | Batch ID: A33804         |             | RunNo: 33804                               |          |             |      |          |      |
| Prep Date:                    |               |       | Analysis Date: 4/26/2016 |             | SeqNo: 1041253                             |          | Units: mg/L |      |          |      |
| Analyte                       | Result        | PQL   | SPK value                | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.47          | 0.050 | 0.5000                   | 0           | 94.2                                       | 80       | 120         |      |          |      |
| Surr: BFB                     | 21            |       | 20.00                    |             | 105                                        | 66.4     | 120         |      |          |      |

|                               |                |      |                          |             |                                            |          |             |      |          |      |
|-------------------------------|----------------|------|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 1604932-001AMS |      | SampType: MS             |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | OW 1+50        |      | Batch ID: A33804         |             | RunNo: 33804                               |          |             |      |          |      |
| Prep Date:                    |                |      | Analysis Date: 4/26/2016 |             | SeqNo: 1041255                             |          | Units: mg/L |      |          |      |
| Analyte                       | Result         | PQL  | SPK value                | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 5.0            | 0.25 | 2.500                    | 3.151       | 75.0                                       | 70       | 130         |      |          |      |
| Surr: BFB                     | 360            |      | 100.0                    |             | 364                                        | 66.4     | 120         |      |          | S    |

|                               |                 |      |                          |             |                                            |          |             |      |          |      |
|-------------------------------|-----------------|------|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 1604932-001AMSD |      | SampType: MSD            |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | OW 1+50         |      | Batch ID: A33804         |             | RunNo: 33804                               |          |             |      |          |      |
| Prep Date:                    |                 |      | Analysis Date: 4/26/2016 |             | SeqNo: 1041256                             |          | Units: mg/L |      |          |      |
| Analyte                       | Result          | PQL  | SPK value                | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 4.9             | 0.25 | 2.500                    | 3.151       | 70.4                                       | 70       | 130         | 2.32 | 20       |      |
| Surr: BFB                     | 360             |      | 100.0                    |             | 360                                        | 66.4     | 120         | 0    | 0        | S    |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604932

04-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier

|                             |            |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs2 |     | SampType: LCS            |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | LCSW       |     | Batch ID: R33772         |             | RunNo: 33772                                    |          |             |      |          |      |
| Prep Date:                  |            |     | Analysis Date: 4/26/2016 |             | SeqNo: 1040456                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result     | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 20         | 1.0 | 20.00                    | 0           | 99.7                                            | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10         |     | 10.00                    |             | 103                                             | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10         |     | 10.00                    |             | 101                                             | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 10         |     | 10.00                    |             | 103                                             | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.8        |     | 10.00                    |             | 98.5                                            | 70       | 130         |      |          |      |

|                             |        |                          |           |                                                 |      |             |           |      |          |      |
|-----------------------------|--------|--------------------------|-----------|-------------------------------------------------|------|-------------|-----------|------|----------|------|
| Sample ID                   | rb3    | SampType: MBLK           |           | TestCode: EPA Method 8260: Volatiles Short List |      |             |           |      |          |      |
| Client ID:                  | PBW    | Batch ID: R33772         |           | RunNo: 33772                                    |      |             |           |      |          |      |
| Prep Date:                  |        | Analysis Date: 4/26/2016 |           | SeqNo: 1040457                                  |      | Units: µg/L |           |      |          |      |
| Analyte                     | Result | PQL                      | SPK value | SPK Ref Val                                     | %REC | LowLimit    | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | ND     | 1.0                      |           |                                                 |      |             |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.5    |                          | 10.00     |                                                 | 94.7 | 70          | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10     |                          | 10.00     |                                                 | 103  | 70          | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.2    |                          | 10.00     |                                                 | 92.2 | 70          | 130       |      |          |      |
| Surr: Toluene-d8            | 9.3    |                          | 10.00     |                                                 | 92.8 | 70          | 130       |      |          |      |

|                                |        |                          |           |             |                                                 |          |             |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | rb3    | SampType: MBLK           |           |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: B33810         |           |             | RunNo: 33810                                    |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 4/27/2016 |           |             | SeqNo: 1041470                                  |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Xylenes, Total                 | ND     | 1.5                      |           |             |                                                 |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 10     |                          | 10.00     |             | 101                                             | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene     | 10     |                          | 10.00     |             | 104                                             | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane     | 11     |                          | 10.00     |             | 106                                             | 70       | 130         |      |          |      |
| Surr: Toluene-d8               | 10     |                          | 10.00     |             | 100                                             | 70       | 130         |      |          |      |

|                             |            |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs2 |     | SampType: LCS            |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | LCSW       |     | Batch ID: B33810         |             | RunNo: 33810                                    |          |             |      |          |      |
| Prep Date:                  |            |     | Analysis Date: 4/27/2016 |             | SeqNo: 1042932                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result     | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 21         | 1.0 | 20.00                    | 0           | 104                                             | 70       | 130         |      |          |      |
| Toluene                     | 20         | 1.0 | 20.00                    | 0           | 102                                             | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10         |     | 10.00                    |             | 102                                             | 70       | 130         |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604932

04-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier

|                            |            |                |           |             |                                       |          |           |      |          |      |  |
|----------------------------|------------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|--|
| Sample ID                  | 100ng lcs2 | SampType:      | LCS       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |  |
| Client ID:                 | LCSW       | Batch ID:      | B33810    | RunNo:      | 33810                                 |          |           |      |          |      |  |
| Prep Date:                 |            | Analysis Date: | 4/27/2016 | SeqNo:      | 1042932                               | Units:   | µg/L      |      |          |      |  |
| Analyte                    | Result     | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |  |
| Surr: 4-Bromofluorobenzene | 10         |                | 10.00     |             | 104                                   | 70       | 130       |      |          |      |  |
| Surr: Dibromofluoromethane | 11         |                | 10.00     |             | 107                                   | 70       | 130       |      |          |      |  |
| Surr: Toluene-d8           | 10         |                | 10.00     |             | 99.7                                  | 70       | 130       |      |          |      |  |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |



## Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1604932

RcptNo: 1

Received by/date:

AT

04/20/16

Logged By: Ashley Gallegos

4/20/2016 7:30:00 AM

Ag

Completed By: Ashley Gallegos

4/21/2016 11:15:03 AM

Ag

Reviewed By:

Ag

04/21/16

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0° C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.4     | Good      | Yes         |         |           |           |





*Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

May 02, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: Collection 4-21-16

OrderNo.: 1604A70

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/23/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A70**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** CW-25+95

**Project:** Collection 4-21-16

**Collection Date:** 4/21/2016 12:50:00 PM

**Lab ID:** 1604A70-001

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>  |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/28/2016 3:27:29 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/28/2016 3:27:29 PM |
| Surr: DNOP                                   | 134    | 63.2-161 |      | %Rec  | 1  | 4/28/2016 3:27:29 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | 3.9    | 1.0      |      | µg/L  | 1  | 4/27/2016 5:32:41 PM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 5:32:41 PM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 5:32:41 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 5:32:41 PM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/27/2016 5:32:41 PM |
| Surr: 1,2-Dichloroethane-d4                  | 95.3   | 70-130   |      | %Rec  | 1  | 4/27/2016 5:32:41 PM |
| Surr: 4-Bromofluorobenzene                   | 100    | 70-130   |      | %Rec  | 1  | 4/27/2016 5:32:41 PM |
| Surr: Dibromofluoromethane                   | 91.3   | 70-130   |      | %Rec  | 1  | 4/27/2016 5:32:41 PM |
| Surr: Toluene-d8                             | 97.8   | 70-130   |      | %Rec  | 1  | 4/27/2016 5:32:41 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A70**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** CW-25+95 Dup

**Project:** Collection 4-21-16

**Collection Date:** 4/21/2016 1:00:00 PM

**Lab ID:** 1604A70-002

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>  |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/28/2016 4:33:29 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/28/2016 4:33:29 PM |
| Surr: DNOP                                   | 127    | 63.2-161 |      | %Rec  | 1  | 4/28/2016 4:33:29 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | 4.1    | 1.0      |      | µg/L  | 1  | 4/27/2016 6:01:34 PM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 6:01:34 PM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 6:01:34 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 6:01:34 PM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/27/2016 6:01:34 PM |
| Surr: 1,2-Dichloroethane-d4                  | 89.1   | 70-130   |      | %Rec  | 1  | 4/27/2016 6:01:34 PM |
| Surr: 4-Bromofluorobenzene                   | 104    | 70-130   |      | %Rec  | 1  | 4/27/2016 6:01:34 PM |
| Surr: Dibromofluoromethane                   | 85.1   | 70-130   |      | %Rec  | 1  | 4/27/2016 6:01:34 PM |
| Surr: Toluene-d8                             | 98.0   | 70-130   |      | %Rec  | 1  | 4/27/2016 6:01:34 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A70**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Field Blank

**Project:** Collection 4-21-16

**Collection Date:** 4/21/2016 1:10:00 PM

**Lab ID:** 1604A70-003

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:30:16 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:30:16 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:30:16 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:30:16 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/27/2016 6:30:16 PM |
| Surr: 1,2-Dichloroethane-d4                  | 104    | 70-130 |      | %Rec  | 1  | 4/27/2016 6:30:16 PM |
| Surr: 4-Bromofluorobenzene                   | 103    | 70-130 |      | %Rec  | 1  | 4/27/2016 6:30:16 PM |
| Surr: Dibromofluoromethane                   | 108    | 70-130 |      | %Rec  | 1  | 4/27/2016 6:30:16 PM |
| Surr: Toluene-d8                             | 99.5   | 70-130 |      | %Rec  | 1  | 4/27/2016 6:30:16 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A70**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Trip Blank

**Project:** Collection 4-21-16

**Collection Date:**

**Lab ID:** 1604A70-004

**Matrix:** TRIP BLANK

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:58:58 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:58:58 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:58:58 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:58:58 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/27/2016 6:58:58 PM |
| Surr: 1,2-Dichloroethane-d4                  | 96.4   | 70-130 |      | %Rec  | 1  | 4/27/2016 6:58:58 PM |
| Surr: 4-Bromofluorobenzene                   | 101    | 70-130 |      | %Rec  | 1  | 4/27/2016 6:58:58 PM |
| Surr: Dibromofluoromethane                   | 99.6   | 70-130 |      | %Rec  | 1  | 4/27/2016 6:58:58 PM |
| Surr: Toluene-d8                             | 97.4   | 70-130 |      | %Rec  | 1  | 4/27/2016 6:58:58 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A70

02-May-16

Client: Western Refining Southwest, Inc.

Project: Collection 4-21-16

|                             |                |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|----------------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1604A70-001BMS |      | SampType: MS             |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | CW-25+95       |      | Batch ID: 25050          |             | RunNo: 33843                             |          |             |      |          |      |
| Prep Date:                  | 4/28/2016      |      | Analysis Date: 4/28/2016 |             | SeqNo: 1043210                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result         | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.1            | 0.20 | 2.500                    | 0           | 125                                      | 73.3     | 174         |      |          |      |
| Surr: DNOP                  | 0.32           |      | 0.2500                   |             | 128                                      | 63.2     | 161         |      |          |      |

|                             |                 |      |           |                |           |          |           |                                |          |        |      |
|-----------------------------|-----------------|------|-----------|----------------|-----------|----------|-----------|--------------------------------|----------|--------|------|
| Sample ID                   | 1604A70-001BMSD |      |           | SampType:      | MSD       |          | TestCode: | EPA Method 8015D: Diesel Range |          |        |      |
| Client ID:                  | CW-25+95        |      |           | Batch ID:      | 25050     |          | RunNo:    | 33843                          |          |        |      |
| Prep Date:                  | 4/28/2016       |      |           | Analysis Date: | 4/28/2016 |          | SeqNo:    | 1043211                        |          | Units: | mg/L |
| Analyte                     | Result          | PQL  | SPK value | SPK Ref Val    | %REC      | LowLimit | HighLimit | %RPD                           | RPDLimit | Qual   |      |
| Diesel Range Organics (DRO) | 2.7             | 0.20 | 2.500     | 0              | 106       | 73.3     | 174       | 15.7                           | 20       |        |      |
| Surr: DNOP                  | 0.27            |      | 0.2500    |                | 109       | 63.2     | 161       | 0                              | 0        |        |      |

|                             |           |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-25050 |      | SampType: LCS            |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |      | Batch ID: 25050          |             | RunNo: 33843                             |          |             |      |          |      |
| Prep Date:                  | 4/28/2016 |      | Analysis Date: 4/28/2016 |             | SeqNo: 1043213                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.5       | 0.20 | 2.500                    | 0           | 138                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.35      |      | 0.2500                   |             | 140                                      | 63.2     | 161         |      |          |      |

|                                |           |      |                          |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-25050  |      | SampType: MBLK           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       |      | Batch ID: 25050          |             | RunNo: 33843                             |          |             |      |          |      |
| Prep Date:                     | 4/28/2016 |      | Analysis Date: 4/28/2016 |             | SeqNo: 1043214                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20 |                          |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5  |                          |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.51      |      | 0.5000                   |             | 103                                      | 63.2     | 161         |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A70

02-May-16

Client: Western Refining Southwest, Inc.

Project: Collection 4-21-16

|                             |           |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|-----------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 100ng lcs | SampType:      | LCS       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | LCSW      | Batch ID:      | R33840    | RunNo:      | 33840                                 |          |           |      |          |      |
| Prep Date:                  |           | Analysis Date: | 4/27/2016 | SeqNo:      | 1042438                               | Units:   | µg/L      |      |          |      |
| Analyte                     | Result    | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 20        | 1.0            | 20.00     | 0           | 99.2                                  | 70       | 130       |      |          |      |
| Toluene                     | 19        | 1.0            | 20.00     | 0           | 94.0                                  | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10        |                | 10.00     |             | 102                                   | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10        |                | 10.00     |             | 103                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11        |                | 10.00     |             | 107                                   | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 9.5       |                | 10.00     |             | 95.4                                  | 70       | 130       |      |          |      |

|                                |        |                |           |             |                                       |          |           |      |          |      |
|--------------------------------|--------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                      | rb     | SampType:      | MBLK      | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                     | PBW    | Batch ID:      | R33840    | RunNo:      | 33840                                 |          |           |      |          |      |
| Prep Date:                     |        | Analysis Date: | 4/27/2016 | SeqNo:      | 1042439                               | Units:   | µg/L      |      |          |      |
| Analyte                        | Result | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Toluene                        | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Ethylbenzene                   | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Xylenes, Total                 | ND     | 1.5            |           |             |                                       |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.7    |                | 10.00     |             | 97.0                                  | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene     | 11     |                | 10.00     |             | 105                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane     | 8.9    |                | 10.00     |             | 89.0                                  | 70       | 130       |      |          |      |
| Surr: Toluene-d8               | 9.8    |                | 10.00     |             | 98.3                                  | 70       | 130       |      |          |      |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1604A70**

RcptNo: 1

Received by/date:

AG

04/23/16

Logged By:

Lindsay Mangin

4/23/2016 8:45:00 AM

*Lindsay Mangin*

Completed By:

Lindsay Mangin

4/25/2016 12:22:34 PM

*Lindsay Mangin*

Reviewed By:

*[Signature]*

04/25/16

## Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

Adjusted?

Checked by:

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via:

☐

eMail

☐

Phone

☐

Fax

☐

In Person

Regarding:

Client Instructions:

17. Additional remarks:

## 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0     | Good      | Yes         |         |           |           |

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: 50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

☐ Other

☒ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: Collection

4-21-16

Project #: Semi Annual

PO#12615521

Project Manager:

Kelly Robinson

Sampler: M. Wicker

On Ice: ☒ Yes ☐ No

Sample Temperature: 10

Date Time Matrix Sample Request ID

Container Type and #

Preservative Type

HEAL No.

1604A70

-001

-001

-002

-002

-003

-004

3-VOA

1-500 ml Amber

3-VOA

1-125 ml Amber

3-VOA

Field Blank

Trip Blank

CW - 25+95

CW - 25+95

CW - 25+95 DUP

CW - 25+95 DUP

Field Blank

Trip Blank

4-21-16 1250

4-21-16 1250

4-21-16 1300

4-21-16 1300

4-21-16 1310

Date Time

4-22-16 1145

Date Time

4/22/16 1840

Reinquired by:

Colin

Reinquired by:

Mat Wicks

Date Time

4/22/16 1645

Date Time

04/23/16 0845

Received by:

Mat Wicks

Received by:

Mat Wicks

Remarks: See attachment for full analytical list



*Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

May 10, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: Cross Gradient 4-21-16 and 4-22-16

OrderNo.: 1604A64

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/23/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A64**

Date Reported: **5/10/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-1

**Project:** Cross Gradient 4-21-16 and 4-22-16

**Collection Date:** 4/21/2016 10:15:00 AM

**Lab ID:** 1604A64-001

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>   |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/26/2016 10:44:11 AM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/26/2016 10:44:11 AM |
| Surr: DNOP                                   | 92.6   | 63.2-161 |      | %Rec  | 1  | 4/26/2016 10:44:11 AM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>BCN</b>   |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/29/2016 11:08:04 PM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/29/2016 11:08:04 PM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/29/2016 11:08:04 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/29/2016 11:08:04 PM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/29/2016 11:08:04 PM |
| Surr: 1,2-Dichloroethane-d4                  | 92.9   | 70-130   |      | %Rec  | 1  | 4/29/2016 11:08:04 PM |
| Surr: 4-Bromofluorobenzene                   | 99.9   | 70-130   |      | %Rec  | 1  | 4/29/2016 11:08:04 PM |
| Surr: Dibromofluoromethane                   | 88.1   | 70-130   |      | %Rec  | 1  | 4/29/2016 11:08:04 PM |
| Surr: Toluene-d8                             | 107    | 70-130   |      | %Rec  | 1  | 4/29/2016 11:08:04 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1604A64

Date Reported: 5/10/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Trip Blank

**Project:** Cross Gradient 4-21-16 and 4-22-16

**Collection Date:**

**Lab ID:** 1604A64-002

**Matrix:** TRIP BLANK

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/30/2016 11:22:10 AM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/30/2016 11:22:10 AM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/30/2016 11:22:10 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/30/2016 11:22:10 AM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/30/2016 11:22:10 AM |
| Surr: 1,2-Dichloroethane-d4                  | 98.0   | 70-130 |      | %Rec  | 1  | 4/30/2016 11:22:10 AM |
| Surr: 4-Bromofluorobenzene                   | 111    | 70-130 |      | %Rec  | 1  | 4/30/2016 11:22:10 AM |
| Surr: Dibromofluoromethane                   | 94.1   | 70-130 |      | %Rec  | 1  | 4/30/2016 11:22:10 AM |
| Surr: Toluene-d8                             | 109    | 70-130 |      | %Rec  | 1  | 4/30/2016 11:22:10 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A64**

Date Reported: **5/10/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-13

**Project:** Cross Gradient 4-21-16 and 4-22-16

**Collection Date:** 4/21/2016 2:40:00 PM

**Lab ID:** 1604A64-003

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/30/2016 11:51:05 AM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/30/2016 11:51:05 AM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/30/2016 11:51:05 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/30/2016 11:51:05 AM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/30/2016 11:51:05 AM |
| Surr: 1,2-Dichloroethane-d4                  | 99.2   | 70-130 |      | %Rec  | 1  | 4/30/2016 11:51:05 AM |
| Surr: 4-Bromofluorobenzene                   | 106    | 70-130 |      | %Rec  | 1  | 4/30/2016 11:51:05 AM |
| Surr: Dibromofluoromethane                   | 95.4   | 70-130 |      | %Rec  | 1  | 4/30/2016 11:51:05 AM |
| Surr: Toluene-d8                             | 104    | 70-130 |      | %Rec  | 1  | 4/30/2016 11:51:05 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A64**

Date Reported: **5/10/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-33

**Project:** Cross Gradient 4-21-16 and 4-22-16

**Collection Date:** 4/22/2016 3:50:00 PM

**Lab ID:** 1604A64-004

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>   |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/26/2016 11:05:43 AM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/26/2016 11:05:43 AM |
| Surr: DNOP                                   | 89.8   | 63.2-161 |      | %Rec  | 1  | 4/26/2016 11:05:43 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>   |
| Gasoline Range Organics (GRO)                | ND     | 0.050    |      | mg/L  | 1  | 4/26/2016 1:38:36 PM  |
| Surr: BFB                                    | 94.4   | 66.4-120 |      | %Rec  | 1  | 4/26/2016 1:38:36 PM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/30/2016 1:17:47 PM  |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/30/2016 1:17:47 PM  |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/30/2016 1:17:47 PM  |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/30/2016 1:17:47 PM  |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/30/2016 1:17:47 PM  |
| Surr: 1,2-Dichloroethane-d4                  | 99.4   | 70-130   |      | %Rec  | 1  | 4/30/2016 1:17:47 PM  |
| Surr: 4-Bromofluorobenzene                   | 101    | 70-130   |      | %Rec  | 1  | 4/30/2016 1:17:47 PM  |
| Surr: Dibromofluoromethane                   | 102    | 70-130   |      | %Rec  | 1  | 4/30/2016 1:17:47 PM  |
| Surr: Toluene-d8                             | 111    | 70-130   |      | %Rec  | 1  | 4/30/2016 1:17:47 PM  |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A64

10-May-16

**Client:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient 4-21-16 and 4-22-16

|                             |           |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-24970 |      | SampType: LCS            |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |      | Batch ID: 24970          |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                  | 4/25/2016 |      | Analysis Date: 4/25/2016 |             | SeqNo: 1039867                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.8       | 0.20 | 2.500                    | 0           | 153                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.31      |      | 0.2500                   |             | 124                                      | 63.2     | 161         |      |          |      |

|                                |           |      |                          |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-24970  |      | SampType: MBLK           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       |      | Batch ID: 24970          |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                     | 4/25/2016 |      | Analysis Date: 4/25/2016 |             | SeqNo: 1039868                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20 |                          |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5  |                          |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.56      |      | 0.5000                   |             | 112                                      | 63.2     | 161         |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A64

10-May-16

**Client:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient 4-21-16 and 4-22-16

|                               |                                 |       |                                                   |             |                    |          |           |      |          |      |
|-------------------------------|---------------------------------|-------|---------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>5ML RB</b>       | SampType: <b>MBLK</b>           |       | TestCode: <b>EPA Method 8015D: Gasoline Range</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b>         | Batch ID: <b>A33804</b>         |       | RunNo: <b>33804</b>                               |             |                    |          |           |      |          |      |
| Prep Date:                    | Analysis Date: <b>4/26/2016</b> |       | SeqNo: <b>1041252</b>                             |             | Units: <b>mg/L</b> |          |           |      |          |      |
| 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                                             |             | 89.9               | 66.4     | 120       |      |          |      |

|                                |                                 |       |                                                   |             |                    |          |           |      |          |      |
|--------------------------------|---------------------------------|-------|---------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>2.5UG GRO LCS</b> | SampType: <b>LCS</b>            |       | TestCode: <b>EPA Method 8015D: Gasoline Range</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b>         | Batch ID: <b>A33804</b>         |       | RunNo: <b>33804</b>                               |             |                    |          |           |      |          |      |
| Prep Date:                     | Analysis Date: <b>4/26/2016</b> |       | SeqNo: <b>1041253</b>                             |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                        | Result                          | PQL   | SPK value                                         | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO)  | 0.47                            | 0.050 | 0.5000                                            | 0           | 94.2               | 80       | 120       |      |          |      |
| Surr: BFB                      | 21                              |       | 20.00                                             |             | 105                | 66.4     | 120       |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A64

10-May-16

**Client:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient 4-21-16 and 4-22-16

|                                |                                 |     |                                                        |             |                    |          |           |      |          |      |
|--------------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>rb</b>            | SampType: <b>MBLK</b>           |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b>          | Batch ID: <b>R33898</b>         |     | RunNo: <b>33898</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                     | Analysis Date: <b>4/29/2016</b> |     | SeqNo: <b>1044053</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                        | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Toluene                        | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Ethylbenzene                   | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Xylenes, Total                 | ND                              | 1.5 |                                                        |             |                    |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.5                             |     | 10.00                                                  |             | 94.6               | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene     | 11                              |     | 10.00                                                  |             | 107                | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane     | 9.0                             |     | 10.00                                                  |             | 90.0               | 70       | 130       |      |          |      |
| Surr: Toluene-d8               | 11                              |     | 10.00                                                  |             | 107                | 70       | 130       |      |          |      |

|                             |                                 |     |                                                        |             |                    |          |           |      |          |      |
|-----------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>100ng lcs3</b> | SampType: <b>LCS</b>            |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b>      | Batch ID: <b>R33898</b>         |     | RunNo: <b>33898</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>4/29/2016</b> |     | SeqNo: <b>1044054</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 18                              | 1.0 | 20.00                                                  | 0           | 90.5               | 70       | 130       |      |          |      |
| Toluene                     | 19                              | 1.0 | 20.00                                                  | 0           | 93.7               | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.8                             |     | 10.00                                                  |             | 98.4               | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10                              |     | 10.00                                                  |             | 101                | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 10                              |     | 10.00                                                  |             | 101                | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 10                              |     | 10.00                                                  |             | 99.9               | 70       | 130       |      |          |      |

|                             |                                 |     |                                                        |             |                    |          |           |      |          |      |
|-----------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>100ng lcs</b>  | SampType: <b>LCS</b>            |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b>      | Batch ID: <b>A33911</b>         |     | RunNo: <b>33911</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>4/30/2016</b> |     | SeqNo: <b>1044642</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 18                              | 1.0 | 20.00                                                  | 0           | 89.5               | 70       | 130       |      |          |      |
| Toluene                     | 21                              | 1.0 | 20.00                                                  | 0           | 103                | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10                              |     | 10.00                                                  |             | 99.9               | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10                              |     | 10.00                                                  |             | 101                | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.6                             |     | 10.00                                                  |             | 96.5               | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 11                              |     | 10.00                                                  |             | 111                | 70       | 130       |      |          |      |

|                       |                                 |     |                                                        |             |                    |          |           |      |          |      |
|-----------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>rb</b>   | SampType: <b>MBLK</b>           |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b> | Batch ID: <b>A33911</b>         |     | RunNo: <b>33911</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:            | Analysis Date: <b>4/30/2016</b> |     | SeqNo: <b>1044643</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte               | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene               | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A64

10-May-16

**Client:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient 4-21-16 and 4-22-16

|                                |                                 |     |                                                        |             |                    |          |           |      |          |      |
|--------------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>rb</b>            | SampType: <b>MBLK</b>           |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b>          | Batch ID: <b>A33911</b>         |     | RunNo: <b>33911</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                     | Analysis Date: <b>4/30/2016</b> |     | SeqNo: <b>1044643</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                        | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Toluene                        | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Ethylbenzene                   | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Xylenes, Total                 | ND                              | 1.5 |                                                        |             |                    |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.8                             |     | 10.00                                                  |             | 97.7               | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene     | 11                              |     | 10.00                                                  |             | 111                | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane     | 9.6                             |     | 10.00                                                  |             | 96.1               | 70       | 130       |      |          |      |
| Surr: Toluene-d8               | 10                              |     | 10.00                                                  |             | 103                | 70       | 130       |      |          |      |

|                                 |                                 |     |                                                        |             |                    |          |           |      |          |      |
|---------------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>1604a64-003ams</b> | SampType: <b>MS</b>             |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
| Client ID: <b>MW-13</b>         | Batch ID: <b>A33911</b>         |     | RunNo: <b>33911</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                      | Analysis Date: <b>4/30/2016</b> |     | SeqNo: <b>1044646</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                         | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                         | 17                              | 1.0 | 20.00                                                  | 0           | 86.5               | 70       | 130       |      |          |      |
| Toluene                         | 20                              | 1.0 | 20.00                                                  | 0           | 101                | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4     | 9.2                             |     | 10.00                                                  |             | 92.0               | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene      | 9.8                             |     | 10.00                                                  |             | 98.5               | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane      | 8.7                             |     | 10.00                                                  |             | 86.7               | 70       | 130       |      |          |      |
| Surr: Toluene-d8                | 11                              |     | 10.00                                                  |             | 109                | 70       | 130       |      |          |      |

|                                  |                                 |     |                                                        |             |                    |          |           |      |          |      |
|----------------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>1604a64-003amsd</b> | SampType: <b>MSD</b>            |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
| Client ID: <b>MW-13</b>          | Batch ID: <b>A33911</b>         |     | RunNo: <b>33911</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                       | Analysis Date: <b>4/30/2016</b> |     | SeqNo: <b>1044647</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                          | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                          | 18                              | 1.0 | 20.00                                                  | 0           | 91.7               | 70       | 130       | 5.82 | 20       |      |
| Toluene                          | 19                              | 1.0 | 20.00                                                  | 0           | 96.9               | 70       | 130       | 4.19 | 20       |      |
| Surr: 1,2-Dichloroethane-d4      | 10                              |     | 10.00                                                  |             | 101                | 70       | 130       | 0    | 0        |      |
| Surr: 4-Bromofluorobenzene       | 10                              |     | 10.00                                                  |             | 102                | 70       | 130       | 0    | 0        |      |
| Surr: Dibromofluoromethane       | 9.5                             |     | 10.00                                                  |             | 94.7               | 70       | 130       | 0    | 0        |      |
| Surr: Toluene-d8                 | 11                              |     | 10.00                                                  |             | 108                | 70       | 130       | 0    | 0        |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1604A64

RcptNo: 1

Received by/date:

AG

04/23/16

Logged By:

Lindsay Mangin

4/23/2016 8:45:00 AM

*Jamie Mangin*

Completed By:

Lindsay Mangin

4/25/2016 10:18:21 AM

*Jamie Mangin*

Reviewed By:

*Jamie Mangin*

04/25/16

## Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

## 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0     | Good      | Yes         |         |           |           |

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: 50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package: ☒ Standard ☐ Other ☒ Level 4 (Full Validation)

☒ EDD (Type)

Project Manager: Kelly Robinson

Sampler: M. Wicker

On Ice: ☒ Yes ☐ No

Sample Temperature: 10

Container Type and #: 3

Preservative Type: HCl

HEAL No: 1602/164

1-500 ml Amber (23)

Cool

-001

-001

-002

Trip Blank

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: Cross Gradient

4-21-16

Semit-Annual

PO#12615521

Project Manager:

Kelly Robinson

Sampler: M. Wicker

On Ice: ☒ Yes ☐ No

Sample Temperature: 10

Container Type and #

Preservative Type

HEAL No

1602/164

1-500 ml

Amber (23)

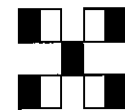
Cool

-001

-001

-002

Trip Blank



**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

BTEX + MTBE + TMBs (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH (8310 or 8270SIMS)

RCRA 8 Metals

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / 8082 PCB's

8260B (VOA) BTEX, MTBE only

8270 (Semi-VOA)

8015B DRO Extended

Air Bubbles (Y or N)

Remarks: See full analyte list.

Received by: [Signature]

Date: 4/22/16

Time: 1645

Received by: [Signature]

Date: 04/23/16

Time: 0845









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

May 04, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: North Boundry Barrier 4-21-16

OrderNo.: 1604A66

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/23/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A66**

Date Reported: **5/4/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** OW 25+70

**Project:** North Boundry Barrier 4-21-16

**Collection Date:** 4/21/2016 9:25:00 AM

**Lab ID:** 1604A66-001

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>   |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/26/2016 12:53:29 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/26/2016 12:53:29 PM |
| Surr: DNOP                                   | 91.2   | 63.2-161 |      | %Rec  | 1  | 4/26/2016 12:53:29 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>   |
| Gasoline Range Organics (GRO)                | 0.13   | 0.050    |      | mg/L  | 1  | 4/26/2016 3:41:15 PM  |
| Surr: BFB                                    | 94.0   | 66.4-120 |      | %Rec  | 1  | 4/26/2016 3:41:15 PM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 1:42:31 PM  |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 1:42:31 PM  |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 1:42:31 PM  |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 1:42:31 PM  |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/27/2016 1:42:31 PM  |
| Surr: 1,2-Dichloroethane-d4                  | 95.0   | 70-130   |      | %Rec  | 1  | 4/27/2016 1:42:31 PM  |
| Surr: 4-Bromofluorobenzene                   | 102    | 70-130   |      | %Rec  | 1  | 4/27/2016 1:42:31 PM  |
| Surr: Dibromofluoromethane                   | 98.7   | 70-130   |      | %Rec  | 1  | 4/27/2016 1:42:31 PM  |
| Surr: Toluene-d8                             | 102    | 70-130   |      | %Rec  | 1  | 4/27/2016 1:42:31 PM  |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A66**

Date Reported: **5/4/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Trip Blank

**Project:** North Boundry Barrier 4-21-16

**Collection Date:**

**Lab ID:** 1604A66-002

**Matrix:** TRIP BLANK

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 2:11:17 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 2:11:17 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 2:11:17 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 2:11:17 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/27/2016 2:11:17 PM |
| Surr: 1,2-Dichloroethane-d4                  | 102    | 70-130 |      | %Rec  | 1  | 4/27/2016 2:11:17 PM |
| Surr: 4-Bromofluorobenzene                   | 100    | 70-130 |      | %Rec  | 1  | 4/27/2016 2:11:17 PM |
| Surr: Dibromofluoromethane                   | 94.6   | 70-130 |      | %Rec  | 1  | 4/27/2016 2:11:17 PM |
| Surr: Toluene-d8                             | 98.8   | 70-130 |      | %Rec  | 1  | 4/27/2016 2:11:17 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A66

04-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundry Barrier 4-21-16

|                             |           |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-24970 |      | SampType: LCS            |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |      | Batch ID: 24970          |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                  | 4/25/2016 |      | Analysis Date: 4/25/2016 |             | SeqNo: 1039867                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.8       | 0.20 | 2.500                    | 0           | 153                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.31      |      | 0.2500                   |             | 124                                      | 63.2     | 161         |      |          |      |

|                                |           |      |                          |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-24970  |      | SampType: MBLK           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       |      | Batch ID: 24970          |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                     | 4/25/2016 |      | Analysis Date: 4/25/2016 |             | SeqNo: 1039868                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20 |                          |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5  |                          |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.56      |      | 0.5000                   |             | 112                                      | 63.2     | 161         |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A66

04-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundry Barrier 4-21-16

|                               |        |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 5ML RB | SampType:      | MBLK      | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | PBW    | Batch ID:      | A33804    | RunNo:      | 33804                            |          |           |      |          |      |
| Prep Date:                    |        | Analysis Date: | 4/26/2016 | SeqNo:      | 1041252                          | 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     |             | 89.9                             | 66.4     | 120       |      |          |      |

|                               |               |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 2.5UG GRO LCS | SampType:      | LCS       | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | LCSW          | Batch ID:      | A33804    | RunNo:      | 33804                            |          |           |      |          |      |
| Prep Date:                    |               | Analysis Date: | 4/26/2016 | SeqNo:      | 1041253                          | Units:   | mg/L      |      |          |      |
| Analyte                       | Result        | PQL            | SPK value | SPK Ref Val | %REC                             | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.47          | 0.050          | 0.5000    | 0           | 94.2                             | 80       | 120       |      |          |      |
| Surr: BFB                     | 21            |                | 20.00     |             | 105                              | 66.4     | 120       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A66

04-May-16

Client: Western Refining Southwest, Inc.

Project: North Boundry Barrier 4-21-16

|                             |           |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|-----------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 100ng lcs | SampType:      | LCS       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | LCSW      | Batch ID:      | R33840    | RunNo:      | 33840                                 |          |           |      |          |      |
| Prep Date:                  |           | Analysis Date: | 4/27/2016 | SeqNo:      | 1042438                               | Units:   | µg/L      |      |          |      |
| Analyte                     | Result    | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 20        | 1.0            | 20.00     | 0           | 99.2                                  | 70       | 130       |      |          |      |
| Toluene                     | 19        | 1.0            | 20.00     | 0           | 94.0                                  | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10        |                | 10.00     |             | 102                                   | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10        |                | 10.00     |             | 103                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11        |                | 10.00     |             | 107                                   | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 9.5       |                | 10.00     |             | 95.4                                  | 70       | 130       |      |          |      |

|                                |        |                |           |             |                                       |          |           |      |          |      |
|--------------------------------|--------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                      | rb     | SampType:      | MBLK      | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                     | PBW    | Batch ID:      | R33840    | RunNo:      | 33840                                 |          |           |      |          |      |
| Prep Date:                     |        | Analysis Date: | 4/27/2016 | SeqNo:      | 1042439                               | Units:   | µg/L      |      |          |      |
| Analyte                        | Result | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Toluene                        | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Ethylbenzene                   | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Xylenes, Total                 | ND     | 1.5            |           |             |                                       |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.7    |                | 10.00     |             | 97.0                                  | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene     | 11     |                | 10.00     |             | 105                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane     | 8.9    |                | 10.00     |             | 89.0                                  | 70       | 130       |      |          |      |
| Surr: Toluene-d8               | 9.8    |                | 10.00     |             | 98.3                                  | 70       | 130       |      |          |      |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |



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

## Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1604A66

RcptNo: 1

|                   |                |                       |  |
|-------------------|----------------|-----------------------|--|
| Received by/date: | AG             | 04/23/16              |  |
| Logged By:        | Lindsay Mangin | 4/23/2016 8:45:00 AM  |  |
| Completed By:     | Lindsay Mangin | 4/25/2016 10:43:51 AM |  |
| Reviewed By:      |                | 04/25/16              |  |

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

|                      |       |       |                                                                                                                               |
|----------------------|-------|-------|-------------------------------------------------------------------------------------------------------------------------------|
| Person Notified:     | _____ | Date: | _____                                                                                                                         |
| By Whom:             | _____ | Via:  | <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person |
| Regarding:           | _____ |       |                                                                                                                               |
| Client Instructions: | _____ |       |                                                                                                                               |

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0                     | Good      | Yes         |         |           |           |

|                                                |  |                                                                             |                               |
|------------------------------------------------|--|-----------------------------------------------------------------------------|-------------------------------|
| <b>Chain-of-Custody Record</b>                 |  | Turn-Around Time:                                                           |                               |
| Client: <b>Western Refining</b>                |  | <input checked="" type="checkbox"/> Standard                                | <input type="checkbox"/> Rush |
| Mailing Address: <b>50 CR 4990</b>             |  | Project Name: <b>North Boundary Barrier</b>                                 |                               |
| <b>Bloomfield, NM 87413</b>                    |  | Project #: <b>Semi Annual</b>                                               |                               |
| Phone #: <b>505-632-4135</b>                   |  | <b>PO# 12615521</b>                                                         |                               |
| email or Fax#:                                 |  | Project Manager:                                                            |                               |
| QA/QC Package:                                 |  | <b>Kelly Robinson</b>                                                       |                               |
| <input type="checkbox"/> Standard              |  | <b>M. Wicker</b>                                                            |                               |
| <input type="checkbox"/> Other                 |  | On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                               |
| <input checked="" type="checkbox"/> EDD (Type) |  | Sample Temperature: <b>10</b>                                               |                               |

|                     |                                              |                               |
|---------------------|----------------------------------------------|-------------------------------|
| Turn-Around Time:   | <input checked="" type="checkbox"/> Standard | <input type="checkbox"/> Rush |
| Project Name:       | Boulevard Barrier                            |                               |
| Project #:          | 4-21-16                                      |                               |
| PO#                 | 12615521                                     |                               |
| Project Manager:    | Kelly Robinson                               |                               |
| Sampler:            | M. Wicker                                    |                               |
| On Ice:             | <input checked="" type="checkbox"/> Yes      | <input type="checkbox"/> No   |
| Sample Temperature: | 10                                           |                               |

|                                                |
|------------------------------------------------|
| Client: <b>Western Refining</b>                |
| Mailing Address: <b>50 CR 4990</b>             |
| <b>Bloomfield, NM 87413</b>                    |
| Phone #: <b>505-632-4135</b>                   |
| email or Fax#:                                 |
| QA/QC Package:                                 |
| <input type="checkbox"/> Standard              |
| <input type="checkbox"/> Other                 |
| <input checked="" type="checkbox"/> EDD (Type) |
| <b>X Level 4 (Full Validation)</b>             |

| Date    | Time | Matrix           | Sample Request ID | Container Type and #           | Preservative Type | HEAL No. |
|---------|------|------------------|-------------------|--------------------------------|-------------------|----------|
| 4-21-16 | 0925 | H <sub>2</sub> O | OW 25+70          | 6-VOA<br>1-500 ml<br>Amber 125 | HCl               | -001     |
| 4-21-16 | 0925 | H <sub>2</sub> O | OW 25+70          |                                | Cool              | -001     |
|         |      |                  | Trip Blank        |                                |                   | -002     |
|         |      |                  |                   |                                |                   |          |
|         |      |                  |                   |                                |                   |          |
|         |      |                  |                   |                                |                   |          |
|         |      |                  |                   |                                |                   |          |

| Date    | Time | Matrix           | Sample Request ID |
|---------|------|------------------|-------------------|
| 4-21-16 | 0925 | H <sub>2</sub> O | OW 25+70          |
| 4-21-16 | 0925 | H <sub>2</sub> O | OW 25+70          |
|         |      |                  | Trip Blank        |
|         |      |                  |                   |
|         |      |                  |                   |
|         |      |                  |                   |
|         |      |                  |                   |

| Date:   | Time: | Relinquished by:   | Received by:       | Date     | Time |
|---------|-------|--------------------|--------------------|----------|------|
| 4-22-16 | 1645  | <i>[Signature]</i> | <i>[Signature]</i> | 4/22/16  | 1645 |
| 4/22/16 | 1840  | <i>[Signature]</i> | <i>[Signature]</i> | 04/23/16 | 0845 |

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this

[illegible]

4/15

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

[illegible]

Remarks: See attachment for full analytical list.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.





*Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

May 02, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: Collection 4-21-16

OrderNo.: 1604A70

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/23/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A70**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** CW-25+95

**Project:** Collection 4-21-16

**Collection Date:** 4/21/2016 12:50:00 PM

**Lab ID:** 1604A70-001

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>  |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/28/2016 3:27:29 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/28/2016 3:27:29 PM |
| Surr: DNOP                                   | 134    | 63.2-161 |      | %Rec  | 1  | 4/28/2016 3:27:29 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | 3.9    | 1.0      |      | µg/L  | 1  | 4/27/2016 5:32:41 PM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 5:32:41 PM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 5:32:41 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 5:32:41 PM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/27/2016 5:32:41 PM |
| Surr: 1,2-Dichloroethane-d4                  | 95.3   | 70-130   |      | %Rec  | 1  | 4/27/2016 5:32:41 PM |
| Surr: 4-Bromofluorobenzene                   | 100    | 70-130   |      | %Rec  | 1  | 4/27/2016 5:32:41 PM |
| Surr: Dibromofluoromethane                   | 91.3   | 70-130   |      | %Rec  | 1  | 4/27/2016 5:32:41 PM |
| Surr: Toluene-d8                             | 97.8   | 70-130   |      | %Rec  | 1  | 4/27/2016 5:32:41 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A70**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** CW-25+95 Dup

**Project:** Collection 4-21-16

**Collection Date:** 4/21/2016 1:00:00 PM

**Lab ID:** 1604A70-002

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>  |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/28/2016 4:33:29 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/28/2016 4:33:29 PM |
| Surr: DNOP                                   | 127    | 63.2-161 |      | %Rec  | 1  | 4/28/2016 4:33:29 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | 4.1    | 1.0      |      | µg/L  | 1  | 4/27/2016 6:01:34 PM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 6:01:34 PM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 6:01:34 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 6:01:34 PM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/27/2016 6:01:34 PM |
| Surr: 1,2-Dichloroethane-d4                  | 89.1   | 70-130   |      | %Rec  | 1  | 4/27/2016 6:01:34 PM |
| Surr: 4-Bromofluorobenzene                   | 104    | 70-130   |      | %Rec  | 1  | 4/27/2016 6:01:34 PM |
| Surr: Dibromofluoromethane                   | 85.1   | 70-130   |      | %Rec  | 1  | 4/27/2016 6:01:34 PM |
| Surr: Toluene-d8                             | 98.0   | 70-130   |      | %Rec  | 1  | 4/27/2016 6:01:34 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A70**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Field Blank

**Project:** Collection 4-21-16

**Collection Date:** 4/21/2016 1:10:00 PM

**Lab ID:** 1604A70-003

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:30:16 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:30:16 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:30:16 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:30:16 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/27/2016 6:30:16 PM |
| Surr: 1,2-Dichloroethane-d4                  | 104    | 70-130 |      | %Rec  | 1  | 4/27/2016 6:30:16 PM |
| Surr: 4-Bromofluorobenzene                   | 103    | 70-130 |      | %Rec  | 1  | 4/27/2016 6:30:16 PM |
| Surr: Dibromofluoromethane                   | 108    | 70-130 |      | %Rec  | 1  | 4/27/2016 6:30:16 PM |
| Surr: Toluene-d8                             | 99.5   | 70-130 |      | %Rec  | 1  | 4/27/2016 6:30:16 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A70**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Trip Blank

**Project:** Collection 4-21-16

**Collection Date:**

**Lab ID:** 1604A70-004

**Matrix:** TRIP BLANK

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:58:58 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:58:58 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:58:58 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 6:58:58 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/27/2016 6:58:58 PM |
| Surr: 1,2-Dichloroethane-d4                  | 96.4   | 70-130 |      | %Rec  | 1  | 4/27/2016 6:58:58 PM |
| Surr: 4-Bromofluorobenzene                   | 101    | 70-130 |      | %Rec  | 1  | 4/27/2016 6:58:58 PM |
| Surr: Dibromofluoromethane                   | 99.6   | 70-130 |      | %Rec  | 1  | 4/27/2016 6:58:58 PM |
| Surr: Toluene-d8                             | 97.4   | 70-130 |      | %Rec  | 1  | 4/27/2016 6:58:58 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A70

02-May-16

Client: Western Refining Southwest, Inc.

Project: Collection 4-21-16

|                             |                |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|----------------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1604A70-001BMS |      | SampType: MS             |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | CW-25+95       |      | Batch ID: 25050          |             | RunNo: 33843                             |          |             |      |          |      |
| Prep Date:                  | 4/28/2016      |      | Analysis Date: 4/28/2016 |             | SeqNo: 1043210                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result         | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.1            | 0.20 | 2.500                    | 0           | 125                                      | 73.3     | 174         |      |          |      |
| Surr: DNOP                  | 0.32           |      | 0.2500                   |             | 128                                      | 63.2     | 161         |      |          |      |

|                             |                 |      |           |                |           |          |           |                                |          |        |      |
|-----------------------------|-----------------|------|-----------|----------------|-----------|----------|-----------|--------------------------------|----------|--------|------|
| Sample ID                   | 1604A70-001BMSD |      |           | SampType:      | MSD       |          | TestCode: | EPA Method 8015D: Diesel Range |          |        |      |
| Client ID:                  | CW-25+95        |      |           | Batch ID:      | 25050     |          | RunNo:    | 33843                          |          |        |      |
| Prep Date:                  | 4/28/2016       |      |           | Analysis Date: | 4/28/2016 |          | SeqNo:    | 1043211                        |          | Units: | mg/L |
| Analyte                     | Result          | PQL  | SPK value | SPK Ref Val    | %REC      | LowLimit | HighLimit | %RPD                           | RPDLimit | Qual   |      |
| Diesel Range Organics (DRO) | 2.7             | 0.20 | 2.500     | 0              | 106       | 73.3     | 174       | 15.7                           | 20       |        |      |
| Surr: DNOP                  | 0.27            |      | 0.2500    |                | 109       | 63.2     | 161       | 0                              | 0        |        |      |

|                             |           |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-25050 |      | SampType: LCS            |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |      | Batch ID: 25050          |             | RunNo: 33843                             |          |             |      |          |      |
| Prep Date:                  | 4/28/2016 |      | Analysis Date: 4/28/2016 |             | SeqNo: 1043213                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.5       | 0.20 | 2.500                    | 0           | 138                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.35      |      | 0.2500                   |             | 140                                      | 63.2     | 161         |      |          |      |

|                                |           |      |                          |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-25050  |      | SampType: MBLK           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       |      | Batch ID: 25050          |             | RunNo: 33843                             |          |             |      |          |      |
| Prep Date:                     | 4/28/2016 |      | Analysis Date: 4/28/2016 |             | SeqNo: 1043214                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20 |                          |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5  |                          |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.51      |      | 0.5000                   |             | 103                                      | 63.2     | 161         |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A70

02-May-16

Client: Western Refining Southwest, Inc.

Project: Collection 4-21-16

|                             |           |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|-----------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 100ng lcs | SampType:      | LCS       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | LCSW      | Batch ID:      | R33840    | RunNo:      | 33840                                 |          |           |      |          |      |
| Prep Date:                  |           | Analysis Date: | 4/27/2016 | SeqNo:      | 1042438                               | Units:   | µg/L      |      |          |      |
| Analyte                     | Result    | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 20        | 1.0            | 20.00     | 0           | 99.2                                  | 70       | 130       |      |          |      |
| Toluene                     | 19        | 1.0            | 20.00     | 0           | 94.0                                  | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10        |                | 10.00     |             | 102                                   | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10        |                | 10.00     |             | 103                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11        |                | 10.00     |             | 107                                   | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 9.5       |                | 10.00     |             | 95.4                                  | 70       | 130       |      |          |      |

|                                |        |                |           |             |                                       |          |           |      |          |      |
|--------------------------------|--------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                      | rb     | SampType:      | MBLK      | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                     | PBW    | Batch ID:      | R33840    | RunNo:      | 33840                                 |          |           |      |          |      |
| Prep Date:                     |        | Analysis Date: | 4/27/2016 | SeqNo:      | 1042439                               | Units:   | µg/L      |      |          |      |
| Analyte                        | Result | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Toluene                        | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Ethylbenzene                   | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Xylenes, Total                 | ND     | 1.5            |           |             |                                       |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.7    |                | 10.00     |             | 97.0                                  | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene     | 11     |                | 10.00     |             | 105                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane     | 8.9    |                | 10.00     |             | 89.0                                  | 70       | 130       |      |          |      |
| Surr: Toluene-d8               | 9.8    |                | 10.00     |             | 98.3                                  | 70       | 130       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

## Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1604A70**

RcptNo: 1

Received by/date:

AG

04/23/16

Logged By:

Lindsay Mangin

4/23/2016 8:45:00 AM

*Lindsay Mangin*

Completed By:

Lindsay Mangin

4/25/2016 12:22:34 PM

*Lindsay Mangin*

Reviewed By:

*[Signature]*

04/25/16

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0                     | Good      | Yes         |         |           |           |



# Chain-of-Custody Record

Client: Western Refining

Mailing Address: 50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

☐ Other

☒ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: Collection

4-21-16

Project #: Semi Annual

PO#12615521

Project Manager:

Kelly Robinson

Sampler: M. Wicker

On Ice: ☒ Yes ☐ No

Sample Temperature: 10

Date Time Matrix Sample Request ID

Container Type and #

Preservative Type

HEAL No.

1604A70

-001

-001

-002

-002

-003

-004

3-VOA

1-500 ml Amber

3-VOA

1-125 ml Amber

3-VOA

Field Blank

Trip Blank

CW - 25+95

CW - 25+95

CW - 25+95 DUP

CW - 25+95 DUP

Field Blank

Trip Blank

4-21-16 1250

4-21-16 1250

4-21-16 1300

4-21-16 1300

4-21-16 1310

Date Time

4-22-16 1145

Date Time

4/22/16 1840

Reinquired by:

Colin

Reinquired by:

Mat Wicks

Received by:

Mat Wicks

Received by:

4/23/16 0845

Remarks: See attachment for full analytical list

## Analysis Request

|                            |                              |                             |                    |                    |                        |               |                                                                                        |                              |                             |                 |                    |                      |
|----------------------------|------------------------------|-----------------------------|--------------------|--------------------|------------------------|---------------|----------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------|--------------------|----------------------|
| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH (8310 or 8270SIMS) | RCRA 8 Metals | Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> ) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | 8015B DRO Extended | Air Bubbles (Y or N) |
|                            |                              |                             |                    |                    |                        |               |                                                                                        |                              | X                           |                 | X                  |                      |
|                            |                              |                             |                    |                    |                        |               |                                                                                        |                              | X                           |                 | X                  |                      |
|                            |                              |                             |                    |                    |                        |               |                                                                                        |                              | X                           |                 | X                  |                      |
|                            |                              |                             |                    |                    |                        |               |                                                                                        |                              | X                           |                 | X                  |                      |
|                            |                              |                             |                    |                    |                        |               |                                                                                        |                              | X                           |                 | X                  |                      |

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



*Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

May 02, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: Refinery Wells 4-21-16

OrderNo.: 1604A68

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/23/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A68**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-30

**Project:** Refinery Wells 4-21-16

**Collection Date:** 4/21/2016 11:50:00 AM

**Lab ID:** 1604A68-001

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF  | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|-----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |     | Analyst: <b>AG</b>   |
| Benzene                                      | 3000   | 100    |      | µg/L  | 100 | 4/27/2016 3:09:04 PM |
| Toluene                                      | 1300   | 100    |      | µg/L  | 100 | 4/27/2016 3:09:04 PM |
| Ethylbenzene                                 | 4700   | 100    |      | µg/L  | 100 | 4/27/2016 3:09:04 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 100    |      | µg/L  | 100 | 4/27/2016 3:09:04 PM |
| Xylenes, Total                               | 13000  | 150    |      | µg/L  | 100 | 4/27/2016 3:09:04 PM |
| Surr: 1,2-Dichloroethane-d4                  | 99.6   | 70-130 |      | %Rec  | 100 | 4/27/2016 3:09:04 PM |
| Surr: 4-Bromofluorobenzene                   | 94.3   | 70-130 |      | %Rec  | 100 | 4/27/2016 3:09:04 PM |
| Surr: Dibromofluoromethane                   | 102    | 70-130 |      | %Rec  | 100 | 4/27/2016 3:09:04 PM |
| Surr: Toluene-d8                             | 99.5   | 70-130 |      | %Rec  | 100 | 4/27/2016 3:09:04 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A68**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Trip Blank

**Project:** Refinery Wells 4-21-16

**Collection Date:**

**Lab ID:** 1604A68-002

**Matrix:** TRIP BLANK

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 3:37:47 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 3:37:47 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 3:37:47 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 3:37:47 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/27/2016 3:37:47 PM |
| Surr: 1,2-Dichloroethane-d4                  | 96.9   | 70-130 |      | %Rec  | 1  | 4/27/2016 3:37:47 PM |
| Surr: 4-Bromofluorobenzene                   | 100    | 70-130 |      | %Rec  | 1  | 4/27/2016 3:37:47 PM |
| Surr: Dibromofluoromethane                   | 104    | 70-130 |      | %Rec  | 1  | 4/27/2016 3:37:47 PM |
| Surr: Toluene-d8                             | 97.6   | 70-130 |      | %Rec  | 1  | 4/27/2016 3:37:47 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A68**

Date Reported: **5/2/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-52

**Project:** Refinery Wells 4-21-16

**Collection Date:** 4/21/2016 10:50:00 AM

**Lab ID:** 1604A68-003

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 4:06:28 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 4:06:28 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 4:06:28 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 4:06:28 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/27/2016 4:06:28 PM |
| Surr: 1,2-Dichloroethane-d4                  | 94.8   | 70-130 |      | %Rec  | 1  | 4/27/2016 4:06:28 PM |
| Surr: 4-Bromofluorobenzene                   | 101    | 70-130 |      | %Rec  | 1  | 4/27/2016 4:06:28 PM |
| Surr: Dibromofluoromethane                   | 88.0   | 70-130 |      | %Rec  | 1  | 4/27/2016 4:06:28 PM |
| Surr: Toluene-d8                             | 99.7   | 70-130 |      | %Rec  | 1  | 4/27/2016 4:06:28 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A68

02-May-16

**Client:** Western Refining Southwest, Inc.

**Project:** Refinery Wells 4-21-16

|                             |                          |                  |           |                |                                                 |             |           |      |          |      |
|-----------------------------|--------------------------|------------------|-----------|----------------|-------------------------------------------------|-------------|-----------|------|----------|------|
| Sample ID                   | 100ng lcs                | SampType: LCS    |           |                | TestCode: EPA Method 8260: Volatiles Short List |             |           |      |          |      |
| Client ID:                  | LCSW                     | Batch ID: R33840 |           |                | RunNo: 33840                                    |             |           |      |          |      |
| Prep Date:                  | Analysis Date: 4/27/2016 |                  |           | SeqNo: 1042438 |                                                 | Units: µg/L |           |      |          |      |
| Analyte                     | Result                   | PQL              | SPK value | SPK Ref Val    | %REC                                            | LowLimit    | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 20                       | 1.0              | 20.00     | 0              | 99.2                                            | 70          | 130       |      |          |      |
| Toluene                     | 19                       | 1.0              | 20.00     | 0              | 94.0                                            | 70          | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10                       |                  | 10.00     |                | 102                                             | 70          | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10                       |                  | 10.00     |                | 103                                             | 70          | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11                       |                  | 10.00     |                | 107                                             | 70          | 130       |      |          |      |
| Surr: Toluene-d8            | 9.5                      |                  | 10.00     |                | 95.4                                            | 70          | 130       |      |          |      |

|                                |        |                          |           |             |                                                 |          |             |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | rb     | SampType: MBLK           |           |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: R33840         |           |             | RunNo: 33840                                    |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 4/27/2016 |           |             | SeqNo: 1042439                                  |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Xylenes, Total                 | ND     | 1.5                      |           |             |                                                 |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.7    |                          | 10.00     |             | 97.0                                            | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene     | 11     |                          | 10.00     |             | 105                                             | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane     | 8.9    |                          | 10.00     |             | 89.0                                            | 70       | 130         |      |          |      |
| Surr: Toluene-d8               | 9.8    |                          | 10.00     |             | 98.3                                            | 70       | 130         |      |          |      |

|                             |                |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|----------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1604a68-003ams |     | SampType: MS             |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | MW-52          |     | Batch ID: R33840         |             | RunNo: 33840                                    |          |             |      |          |      |
| Prep Date:                  |                |     | Analysis Date: 4/27/2016 |             | SeqNo: 1042450                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result         | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 21             | 1.0 | 20.00                    | 0           | 103                                             | 70       | 130         |      |          |      |
| Toluene                     | 19             | 1.0 | 20.00                    | 0           | 96.4                                            | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.7            |     | 10.00                    |             | 96.9                                            | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10             |     | 10.00                    |             | 100                                             | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 8.8            |     | 10.00                    |             | 87.7                                            | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.8            |     | 10.00                    |             | 98.3                                            | 70       | 130         |      |          |      |

|            |                 |     |                |             |      |           |                                       |        |          |      |  |
|------------|-----------------|-----|----------------|-------------|------|-----------|---------------------------------------|--------|----------|------|--|
| Sample ID  | 1604a68-003amsd |     | SampType:      | MSD         |      | TestCode: | EPA Method 8260: Volatiles Short List |        |          |      |  |
| Client ID: | MW-52           |     | Batch ID:      | R33840      |      | RunNo:    | 33840                                 |        |          |      |  |
| Prep Date: |                 |     | Analysis Date: | 4/27/2016   |      | SeqNo:    | 1042451                               | Units: | µg/L     |      |  |
| Analyte    | Result          | PQL | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                             | %RPD   | RPDLimit | Qual |  |
| Benzene    | 19              | 1.0 | 20.00          | 0           | 97.1 | 70        | 130                                   | 5.72   | 20       |      |  |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A68

02-May-16

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 4-21-16

|                             |                 |                |           |             |                                       |          |           |      |          |      |  |
|-----------------------------|-----------------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|--|
| Sample ID                   | 1604a68-003amsd | SampType:      | MSD       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |  |
| Client ID:                  | MW-52           | Batch ID:      | R33840    | RunNo:      | 33840                                 |          |           |      |          |      |  |
| Prep Date:                  |                 | Analysis Date: | 4/27/2016 | SeqNo:      | 1042451                               | Units:   | µg/L      |      |          |      |  |
| Analyte                     | Result          | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |  |
| Toluene                     | 18              | 1.0            | 20.00     | 0           | 92.2                                  | 70       | 130       | 4.44 | 20       |      |  |
| Surr: 1,2-Dichloroethane-d4 | 9.6             |                | 10.00     |             | 95.8                                  | 70       | 130       | 0    | 0        |      |  |
| Surr: 4-Bromofluorobenzene  | 10              |                | 10.00     |             | 100                                   | 70       | 130       | 0    | 0        |      |  |
| Surr: Dibromofluoromethane  | 8.4             |                | 10.00     |             | 83.5                                  | 70       | 130       | 0    | 0        |      |  |
| Surr: Toluene-d8            | 9.9             |                | 10.00     |             | 99.0                                  | 70       | 130       | 0    | 0        |      |  |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1604A58

RcptNo: 1

Received by/date:

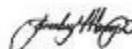
AG

04/23/16

Logged By:

Lindsay Mangin

4/23/2016 8:45:00 AM



Completed By:

Lindsay Mangin

4/25/2016 12:02:51 PM



Reviewed By:



04/25/16

## Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH.

(&lt;2 or &gt;12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

## 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0     | Good      | Yes         |         |           |           |





# Chain-of-Custody Record

Client: Western Refining

Mailing Address: 50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

☐ Other

☒ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: Refinery Wells

4-21-16

Project #: Semi-Annual

PO# 12615521

Project Manager:

Kelly Robinson

Sampler: M. Wicker

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

Date Time Matrix Sample Request ID

Container Type and #

Preservative Type

HEAL No.

4-21-16 1050 H<sub>2</sub>O MW - 52

3-VOA

HCl

1605-AL68

-003

## Analysis Request

BTX + MTBE + TMB's (8021)  
BTX + MTBE + TPH (Gas only)  
TPH 8015B (GRO / BRO / MRO)  
TPH (Method 418.1)  
EDB (Method 504.1)  
PAH (8310 or 8270SIMS)  
RCRA 8 Metals  
Anions (F<sup>-</sup>, Cl<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>, PO<sub>4</sub><sup>3-</sup>, SO<sub>4</sub><sup>2-</sup>)  
8081 Pesticides / 8082 PCB's  
8260B (VOA)  
8270 (Semi-VOA) BTEX, MTBE  
Air Bubbles (Y or N)

Remarks: See full analyte list.

Received by:

4/22/16 1645

Received by:

4/23/16 0815

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



*Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

May 04, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX

RE: Down Gradient 4-22-16

OrderNo.: 1604A65

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 7 sample(s) on 4/23/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A65**

Date Reported: **5/4/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-12

**Project:** Down Gradient 4-22-16

**Collection Date:** 4/22/2016 1:40:00 PM

**Lab ID:** 1604A65-001

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>   |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/26/2016 11:27:13 AM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/26/2016 11:27:13 AM |
| Surr: DNOP                                   | 99.6   | 63.2-161 |      | %Rec  | 1  | 4/26/2016 11:27:13 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>   |
| Gasoline Range Organics (GRO)                | ND     | 0.050    |      | mg/L  | 1  | 4/26/2016 2:03:03 PM  |
| Surr: BFB                                    | 87.0   | 66.4-120 |      | %Rec  | 1  | 4/26/2016 2:03:03 PM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 2:38:14 AM  |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 2:38:14 AM  |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 2:38:14 AM  |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/28/2016 5:41:01 PM  |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/27/2016 2:38:14 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 97.3   | 70-130   |      | %Rec  | 1  | 4/27/2016 2:38:14 AM  |
| Surr: 4-Bromofluorobenzene                   | 99.5   | 70-130   |      | %Rec  | 1  | 4/27/2016 2:38:14 AM  |
| Surr: Dibromofluoromethane                   | 100    | 70-130   |      | %Rec  | 1  | 4/27/2016 2:38:14 AM  |
| Surr: Toluene-d8                             | 97.0   | 70-130   |      | %Rec  | 1  | 4/27/2016 2:38:14 AM  |

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

|                    |                                                         |                                                             |
|--------------------|---------------------------------------------------------|-------------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
|                    | D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
|                    | H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
|                    | ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
|                    | R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
|                    | S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A65**

Date Reported: **5/4/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-12 Dup

**Project:** Down Gradient 4-22-16

**Collection Date:** 4/22/2016 1:45:00 PM

**Lab ID:** 1604A65-002

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>   |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/26/2016 11:48:50 AM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/26/2016 11:48:50 AM |
| Surr: DNOP                                   | 99.7   | 63.2-161 |      | %Rec  | 1  | 4/26/2016 11:48:50 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>   |
| Gasoline Range Organics (GRO)                | ND     | 0.050    |      | mg/L  | 1  | 4/26/2016 2:27:33 PM  |
| Surr: BFB                                    | 91.3   | 66.4-120 |      | %Rec  | 1  | 4/26/2016 2:27:33 PM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 3:07:03 AM  |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 3:07:03 AM  |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 3:07:03 AM  |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/28/2016 6:09:45 PM  |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/27/2016 3:07:03 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   |      | %Rec  | 1  | 4/27/2016 3:07:03 AM  |
| Surr: 4-Bromofluorobenzene                   | 95.7   | 70-130   |      | %Rec  | 1  | 4/27/2016 3:07:03 AM  |
| Surr: Dibromofluoromethane                   | 93.1   | 70-130   |      | %Rec  | 1  | 4/27/2016 3:07:03 AM  |
| Surr: Toluene-d8                             | 96.9   | 70-130   |      | %Rec  | 1  | 4/27/2016 3:07:03 AM  |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A65**

Date Reported: **5/4/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Trip Blank

**Project:** Down Gradient 4-22-16

**Collection Date:**

**Lab ID:** 1604A65-003

**Matrix:** TRIP BLANK

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 3:35:51 AM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 3:35:51 AM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 3:35:51 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/28/2016 6:38:43 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/27/2016 3:35:51 AM |
| Surr: 1,2-Dichloroethane-d4                  | 100    | 70-130 |      | %Rec  | 1  | 4/27/2016 3:35:51 AM |
| Surr: 4-Bromofluorobenzene                   | 97.5   | 70-130 |      | %Rec  | 1  | 4/27/2016 3:35:51 AM |
| Surr: Dibromofluoromethane                   | 103    | 70-130 |      | %Rec  | 1  | 4/27/2016 3:35:51 AM |
| Surr: Toluene-d8                             | 98.9   | 70-130 |      | %Rec  | 1  | 4/27/2016 3:35:51 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A65**

Date Reported: **5/4/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-35

**Project:** Down Gradient 4-22-16

**Collection Date:** 4/22/2016 2:50:00 PM

**Lab ID:** 1604A65-004

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 4:04:31 AM  |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 4:04:31 AM  |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 4:04:31 AM  |
| Methyl tert-butyl ether (MTBE)               | 1.5    | 1.0    |      | µg/L  | 1  | 4/27/2016 11:47:20 AM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/27/2016 4:04:31 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 94.5   | 70-130 |      | %Rec  | 1  | 4/27/2016 4:04:31 AM  |
| Surr: 4-Bromofluorobenzene                   | 98.1   | 70-130 |      | %Rec  | 1  | 4/27/2016 4:04:31 AM  |
| Surr: Dibromofluoromethane                   | 86.9   | 70-130 |      | %Rec  | 1  | 4/27/2016 4:04:31 AM  |
| Surr: Toluene-d8                             | 101    | 70-130 |      | %Rec  | 1  | 4/27/2016 4:04:31 AM  |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A65**

Date Reported: **5/4/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-35 Dup

**Project:** Down Gradient 4-22-16

**Collection Date:** 4/22/2016 2:55:00 PM

**Lab ID:** 1604A65-005

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 4:33:17 AM  |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 4:33:17 AM  |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/27/2016 4:33:17 AM  |
| Methyl tert-butyl ether (MTBE)               | 1.7    | 1.0    |      | µg/L  | 1  | 4/27/2016 12:16:00 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/27/2016 4:33:17 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 97.4   | 70-130 |      | %Rec  | 1  | 4/27/2016 4:33:17 AM  |
| Surr: 4-Bromofluorobenzene                   | 97.5   | 70-130 |      | %Rec  | 1  | 4/27/2016 4:33:17 AM  |
| Surr: Dibromofluoromethane                   | 95.4   | 70-130 |      | %Rec  | 1  | 4/27/2016 4:33:17 AM  |
| Surr: Toluene-d8                             | 99.1   | 70-130 |      | %Rec  | 1  | 4/27/2016 4:33:17 AM  |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A65**

Date Reported: **5/4/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-37

**Project:** Down Gradient 4-22-16

**Collection Date:** 4/22/2016 3:20:00 PM

**Lab ID:** 1604A65-006

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>   |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/26/2016 12:10:20 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/26/2016 12:10:20 PM |
| Surr: DNOP                                   | 90.0   | 63.2-161 |      | %Rec  | 1  | 4/26/2016 12:10:20 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>   |
| Gasoline Range Organics (GRO)                | ND     | 0.050    |      | mg/L  | 1  | 4/26/2016 2:52:08 PM  |
| Surr: BFB                                    | 91.1   | 66.4-120 |      | %Rec  | 1  | 4/26/2016 2:52:08 PM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 5:02:03 AM  |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 5:02:03 AM  |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 5:02:03 AM  |
| Methyl tert-butyl ether (MTBE)               | 1.0    | 1.0      |      | µg/L  | 1  | 4/27/2016 12:44:56 PM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/27/2016 5:02:03 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 96.9   | 70-130   |      | %Rec  | 1  | 4/27/2016 5:02:03 AM  |
| Surr: 4-Bromofluorobenzene                   | 98.9   | 70-130   |      | %Rec  | 1  | 4/27/2016 5:02:03 AM  |
| Surr: Dibromofluoromethane                   | 93.0   | 70-130   |      | %Rec  | 1  | 4/27/2016 5:02:03 AM  |
| Surr: Toluene-d8                             | 100    | 70-130   |      | %Rec  | 1  | 4/27/2016 5:02:03 AM  |

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

|                    |                                                         |                                                             |
|--------------------|---------------------------------------------------------|-------------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
|                    | D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
|                    | H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
|                    | ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
|                    | R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
|                    | S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A65**

Date Reported: **5/4/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-38

**Project:** Down Gradient 4-22-16

**Collection Date:** 4/22/2016 2:25:00 PM

**Lab ID:** 1604A65-007

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>KJH</b>   |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 4/26/2016 12:31:55 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 4/26/2016 12:31:55 PM |
| Surr: DNOP                                   | 90.1   | 63.2-161 |      | %Rec  | 1  | 4/26/2016 12:31:55 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>NSB</b>   |
| Gasoline Range Organics (GRO)                | ND     | 0.050    |      | mg/L  | 1  | 4/26/2016 3:16:42 PM  |
| Surr: BFB                                    | 93.7   | 66.4-120 |      | %Rec  | 1  | 4/26/2016 3:16:42 PM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 8:12:24 AM  |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 8:12:24 AM  |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 8:12:24 AM  |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 4/27/2016 1:13:45 PM  |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 4/27/2016 8:12:24 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   |      | %Rec  | 1  | 4/27/2016 8:12:24 AM  |
| Surr: 4-Bromofluorobenzene                   | 99.7   | 70-130   |      | %Rec  | 1  | 4/27/2016 8:12:24 AM  |
| Surr: Dibromofluoromethane                   | 111    | 70-130   |      | %Rec  | 1  | 4/27/2016 8:12:24 AM  |
| Surr: Toluene-d8                             | 102    | 70-130   |      | %Rec  | 1  | 4/27/2016 8:12:24 AM  |

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

|                    |                                                         |                                                             |
|--------------------|---------------------------------------------------------|-------------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
|                    | D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
|                    | H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
|                    | ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
|                    | R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
|                    | S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A65

04-May-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient 4-22-16

|                             |           |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-24970 |      | SampType: LCS            |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |      | Batch ID: 24970          |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                  | 4/25/2016 |      | Analysis Date: 4/25/2016 |             | SeqNo: 1039867                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.8       | 0.20 | 2.500                    | 0           | 153                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.31      |      | 0.2500                   |             | 124                                      | 63.2     | 161         |      |          |      |

|                                |           |      |                          |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-24970  |      | SampType: MBLK           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       |      | Batch ID: 24970          |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                     | 4/25/2016 |      | Analysis Date: 4/25/2016 |             | SeqNo: 1039868                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20 |                          |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5  |                          |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.56      |      | 0.5000                   |             | 112                                      | 63.2     | 161         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A65

04-May-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient 4-22-16

|                               |        |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 5ML RB | SampType:      | MBLK      | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | PBW    | Batch ID:      | A33804    | RunNo:      | 33804                            |          |           |      |          |      |
| Prep Date:                    |        | Analysis Date: | 4/26/2016 | SeqNo:      | 1041252                          | 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     |             | 89.9                             | 66.4     | 120       |      |          |      |

|                               |               |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 2.5UG GRO LCS | SampType:      | LCS       | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | LCSW          | Batch ID:      | A33804    | RunNo:      | 33804                            |          |           |      |          |      |
| Prep Date:                    |               | Analysis Date: | 4/26/2016 | SeqNo:      | 1041253                          | Units:   | mg/L      |      |          |      |
| Analyte                       | Result        | PQL            | SPK value | SPK Ref Val | %REC                             | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.47          | 0.050          | 0.5000    | 0           | 94.2                             | 80       | 120       |      |          |      |
| Surr: BFB                     | 21            |                | 20.00     |             | 105                              | 66.4     | 120       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A65

04-May-16

**Client:** Western Refining Southwest, Inc.

**Project:** Down Gradient 4-22-16

| Sample ID <b>rb3</b>        | SampType: <b>MBLK</b>           |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
|-----------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>PBW</b>       | Batch ID: <b>B33810</b>         |     | RunNo: <b>33810</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>4/27/2016</b> |     | SeqNo: <b>1041470</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Toluene                     | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Ethylbenzene                | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Xylenes, Total              | ND                              | 1.5 |                                                        |             |                    |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10                              |     | 10.00                                                  |             | 101                | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10                              |     | 10.00                                                  |             | 104                | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11                              |     | 10.00                                                  |             | 106                | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 10                              |     | 10.00                                                  |             | 100                | 70       | 130       |      |          |      |

| Sample ID <b>100ng lcs</b>  | SampType: <b>LCS</b>            |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
|-----------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>LCSW</b>      | Batch ID: <b>R33840</b>         |     | RunNo: <b>33840</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>4/27/2016</b> |     | SeqNo: <b>1042438</b>                                  |             | Units: <b>%Rec</b> |          |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 1,2-Dichloroethane-d4 | 10                              |     | 10.00                                                  |             | 102                | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10                              |     | 10.00                                                  |             | 103                | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11                              |     | 10.00                                                  |             | 107                | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 9.5                             |     | 10.00                                                  |             | 95.4               | 70       | 130       |      |          |      |

| Sample ID <b>rb</b>            | SampType: <b>MBLK</b>           |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
|--------------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>PBW</b>          | Batch ID: <b>R33840</b>         |     | RunNo: <b>33840</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                     | Analysis Date: <b>4/27/2016</b> |     | SeqNo: <b>1042439</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                        | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Methyl tert-butyl ether (MTBE) | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.7                             |     | 10.00                                                  |             | 97.0               | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene     | 11                              |     | 10.00                                                  |             | 105                | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane     | 8.9                             |     | 10.00                                                  |             | 89.0               | 70       | 130       |      |          |      |
| Surr: Toluene-d8               | 9.8                             |     | 10.00                                                  |             | 98.3               | 70       | 130       |      |          |      |

| Sample ID <b>100ng lcs2</b> | SampType: <b>LCS</b>            |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
|-----------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>LCSW</b>      | Batch ID: <b>B33810</b>         |     | RunNo: <b>33810</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>4/27/2016</b> |     | SeqNo: <b>1042932</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 21                              | 1.0 | 20.00                                                  | 0           | 104                | 70       | 130       |      |          |      |
| Toluene                     | 20                              | 1.0 | 20.00                                                  | 0           | 102                | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10                              |     | 10.00                                                  |             | 102                | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10                              |     | 10.00                                                  |             | 104                | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11                              |     | 10.00                                                  |             | 107                | 70       | 130       |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A65

04-May-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient 4-22-16

|                  |            |                |           |             |                                       |          |           |      |          |      |
|------------------|------------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID        | 100ng lcs2 | SampType:      | LCS       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:       | LCSW       | Batch ID:      | B33810    | RunNo:      | 33810                                 |          |           |      |          |      |
| Prep Date:       |            | Analysis Date: | 4/27/2016 | SeqNo:      | 1042932                               | Units:   | µg/L      |      |          |      |
| Analyte          | Result     | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: Toluene-d8 | 10         |                | 10.00     |             | 99.7                                  | 70       | 130       |      |          |      |

|                             |           |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|-----------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 100ng lcs | SampType:      | LCS       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | LCSW      | Batch ID:      | R33873    | RunNo:      | 33873                                 |          |           |      |          |      |
| Prep Date:                  |           | Analysis Date: | 4/28/2016 | SeqNo:      | 1043397                               | Units:   | %Rec      |      |          |      |
| Analyte                     | Result    | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 1,2-Dichloroethane-d4 | 10        |                | 10.00     |             | 104                                   | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10        |                | 10.00     |             | 99.9                                  | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 10        |                | 10.00     |             | 102                                   | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 10        |                | 10.00     |             | 102                                   | 70       | 130       |      |          |      |

|                                |        |                |           |             |                                       |          |           |      |          |      |
|--------------------------------|--------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                      | rb     | SampType:      | MBLK      | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                     | PBW    | Batch ID:      | R33873    | RunNo:      | 33873                                 |          |           |      |          |      |
| Prep Date:                     |        | Analysis Date: | 4/28/2016 | SeqNo:      | 1043400                               | Units:   | µg/L      |      |          |      |
| Analyte                        | Result | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.7    |                | 10.00     |             | 96.6                                  | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene     | 10     |                | 10.00     |             | 105                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane     | 9.3    |                | 10.00     |             | 92.8                                  | 70       | 130       |      |          |      |
| Surr: Toluene-d8               | 9.8    |                | 10.00     |             | 97.6                                  | 70       | 130       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



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

## Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1604A65

RcptNo: 1

Received by/date: AG 04/23/16

Logged By: Lindsay Mangin 4/23/2016 8:45:00 AM

Completed By: Lindsay Mangin 4/25/2016 10:30:28 AM

Reviewed By: Jal 04/25/16

*Lindsay Mangin*  
*Lindsay Mangin*

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_  
By Whom: \_\_\_\_\_ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person  
Regarding: \_\_\_\_\_  
Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0                     | Good      | Yes         |         |           |           |







**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

Project Name: **Down Gradient**

Project #: Semi Annual

Phone #: 505-632-4135

QA/QC Package:

Kelly Kobusson

☐ Other

X EDD (Type)

| Date    | Time  | Matrix           | Sample Request ID | Container Type and #  | Preservative Type | HEAL No. |
|---------|-------|------------------|-------------------|-----------------------|-------------------|----------|
| 4-22-16 | 1520  | H <sub>2</sub> O | MW - 37           | 5-VOA<br>6            | HCl               | -006     |
| 4-22-16 | 1920  | H <sub>2</sub> O | MW - 37           | 1-500 ml<br>Amber (B) | Cool              | -006     |
|         |       |                  |                   |                       |                   |          |
|         |       |                  |                   |                       |                   |          |
|         |       |                  |                   |                       |                   |          |
|         |       |                  |                   |                       |                   |          |
|         |       |                  |                   |                       |                   |          |
|         |       |                  |                   |                       |                   |          |
|         |       |                  |                   |                       |                   |          |
|         |       |                  |                   |                       |                   |          |
|         |       |                  |                   |                       |                   |          |
| Date:   | Time: | Relinquished by: | Received by:      |                       |                   |          |
| 4-22-16 | 1645  | [Signature]      | Munira Wazir      |                       |                   |          |
| Date:   | Time: | Relinquished by: | Date Time         |                       |                   |          |
| 4-22-16 | 1840  | Munira Wazir     | 4/22/16 1845      |                       |                   |          |

Received by:

Date \_\_\_\_\_

Time

Relinquished by

Received by:

Time

1

|          |                        |
|----------|------------------------|
| Remarks: | See full analyte list. |
|----------|------------------------|

## Analysis Request

[illegible]

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.







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

May 23, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: San Juan River Bluff Seeps 4-22-16

OrderNo.: 1604A69

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/23/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A69**Date Reported: **5/23/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Seep-1**Project:** San Juan River Bluff Seeps 4-22-16**Collection Date:** 4/22/2016 11:10:00 AM**Lab ID:** 1604A69-001**Matrix:** AQUEOUS**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units      | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|------------|----|----------------------|
| <b>EPA METHOD 300.0: ANIONS</b>              |        |        |      |            |    | Analyst: <b>LGT</b>  |
| Fluoride                                     | 0.35   | 0.10   |      | mg/L       | 1  | 4/26/2016 8:41:15 PM |
| Chloride                                     | 200    | 10     |      | mg/L       | 20 | 4/26/2016 8:53:40 PM |
| Bromide                                      | 2.6    | 0.10   |      | mg/L       | 1  | 4/26/2016 8:41:15 PM |
| Phosphorus, Orthophosphate (As P')           | ND     | 2.5    | H    | mg/L       | 5  | 4/30/2016 1:20:19 AM |
| Sulfate                                      | 1300   | 25     |      | mg/L       | 50 | 4/28/2016 3:56:20 PM |
| Nitrate+Nitrite as N                         | ND     | 1.0    |      | mg/L       | 5  | 4/26/2016 9:30:53 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |            |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L       | 1  | 4/28/2016 1:50:11 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L       | 1  | 4/28/2016 1:50:11 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L       | 1  | 4/28/2016 1:50:11 PM |
| Methyl tert-butyl ether (MTBE)               | 41     | 1.0    |      | µg/L       | 1  | 4/28/2016 1:50:11 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L       | 1  | 4/28/2016 1:50:11 PM |
| Surr: 1,2-Dichloroethane-d4                  | 98.9   | 70-130 |      | %Rec       | 1  | 4/28/2016 1:50:11 PM |
| Surr: 4-Bromofluorobenzene                   | 97.5   | 70-130 |      | %Rec       | 1  | 4/28/2016 1:50:11 PM |
| Surr: Dibromofluoromethane                   | 97.2   | 70-130 |      | %Rec       | 1  | 4/28/2016 1:50:11 PM |
| Surr: Toluene-d8                             | 96.4   | 70-130 |      | %Rec       | 1  | 4/28/2016 1:50:11 PM |
| <b>CARBON DIOXIDE</b>                        |        |        |      |            |    | Analyst: <b>JRR</b>  |
| Total Carbon Dioxide                         | 450    | 1.0    | H    | mg CO2/L   | 1  | 4/27/2016 4:03:31 PM |
| <b>SM2320B: ALKALINITY</b>                   |        |        |      |            |    | Analyst: <b>JRR</b>  |
| Bicarbonate (As CaCO3)                       | 479.6  | 20.00  |      | mg/L CaCO3 | 1  | 4/27/2016 4:03:31 PM |
| Carbonate (As CaCO3)                         | ND     | 2.000  |      | mg/L CaCO3 | 1  | 4/27/2016 4:03:31 PM |
| Total Alkalinity (as CaCO3)                  | 479.6  | 20.00  |      | mg/L CaCO3 | 1  | 4/27/2016 4:03:31 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A69**

Date Reported: **5/23/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Trip Blank

**Project:** San Juan River Bluff Seeps 4-22-16

**Collection Date:**

**Lab ID:** 1604A69-002

**Matrix:** TRIP BLANK

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/28/2016 3:16:30 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/28/2016 3:16:30 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/28/2016 3:16:30 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/28/2016 3:16:30 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/28/2016 3:16:30 PM |
| Surr: 1,2-Dichloroethane-d4                  | 96.2   | 70-130 |      | %Rec  | 1  | 4/28/2016 3:16:30 PM |
| Surr: 4-Bromofluorobenzene                   | 105    | 70-130 |      | %Rec  | 1  | 4/28/2016 3:16:30 PM |
| Surr: Dibromofluoromethane                   | 97.6   | 70-130 |      | %Rec  | 1  | 4/28/2016 3:16:30 PM |
| Surr: Toluene-d8                             | 99.6   | 70-130 |      | %Rec  | 1  | 4/28/2016 3:16:30 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A69**Date Reported: **5/23/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Seep-3**Project:** San Juan River Bluff Seeps 4-22-16**Collection Date:** 4/22/2016 11:20:00 AM**Lab ID:** 1604A69-003**Matrix:** AQUEOUS**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units      | DF  | Date Analyzed        |
|----------------------------------------------|--------|--------|------|------------|-----|----------------------|
| <b>EPA METHOD 300.0: ANIONS</b>              |        |        |      |            |     | Analyst: <b>LGT</b>  |
| Fluoride                                     | 0.22   | 0.10   |      | mg/L       | 1   | 4/26/2016 9:06:05 PM |
| Chloride                                     | 260    | 10     |      | mg/L       | 20  | 4/26/2016 9:18:29 PM |
| Bromide                                      | 3.2    | 0.10   |      | mg/L       | 1   | 4/26/2016 9:06:05 PM |
| Phosphorus, Orthophosphate (As P')           | ND     | 5.0    | H    | mg/L       | 10  | 5/3/2016 1:20:49 AM  |
| Sulfate                                      | 2500   | 50     |      | mg/L       | 100 | 4/28/2016 4:21:09 PM |
| Nitrate+Nitrite as N                         | ND     | 1.0    |      | mg/L       | 5   | 4/26/2016 9:43:18 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |            |     | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L       | 1   | 4/28/2016 3:45:27 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L       | 1   | 4/28/2016 3:45:27 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L       | 1   | 4/28/2016 3:45:27 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L       | 1   | 4/28/2016 3:45:27 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L       | 1   | 4/28/2016 3:45:27 PM |
| Surr: 1,2-Dichloroethane-d4                  | 99.5   | 70-130 |      | %Rec       | 1   | 4/28/2016 3:45:27 PM |
| Surr: 4-Bromofluorobenzene                   | 103    | 70-130 |      | %Rec       | 1   | 4/28/2016 3:45:27 PM |
| Surr: Dibromofluoromethane                   | 95.3   | 70-130 |      | %Rec       | 1   | 4/28/2016 3:45:27 PM |
| Surr: Toluene-d8                             | 98.0   | 70-130 |      | %Rec       | 1   | 4/28/2016 3:45:27 PM |
| <b>CARBON DIOXIDE</b>                        |        |        |      |            |     | Analyst: <b>JRR</b>  |
| Total Carbon Dioxide                         | 330    | 1.0    | H    | mg CO2/L   | 1   | 4/27/2016 4:23:37 PM |
| <b>SM2320B: ALKALINITY</b>                   |        |        |      |            |     | Analyst: <b>JRR</b>  |
| Bicarbonate (As CaCO3)                       | 365.4  | 20.00  |      | mg/L CaCO3 | 1   | 4/27/2016 4:23:37 PM |
| Carbonate (As CaCO3)                         | ND     | 2.000  |      | mg/L CaCO3 | 1   | 4/27/2016 4:23:37 PM |
| Total Alkalinity (as CaCO3)                  | 365.4  | 20.00  |      | mg/L CaCO3 | 1   | 4/27/2016 4:23:37 PM |

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

|                    |    |                                                       |    |                                                           |             |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|-------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           | Page 3 of 8 |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |             |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |             |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |             |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |             |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |
|                    |    |                                                       |    |                                                           |             |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A69

23-May-16

**Client:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff Seeps 4-22-16

|                       |                                 |      |                                           |             |                    |          |           |      |          |      |
|-----------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>   | SampType: <b>MBLK</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b> | Batch ID: <b>A33817</b>         |      | RunNo: <b>33817</b>                       |             |                    |          |           |      |          |      |
| Prep Date:            | Analysis Date: <b>4/26/2016</b> |      | SeqNo: <b>1041686</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte               | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride              | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Chloride              | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |
| Bromide               | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Nitrate+Nitrite as N  | ND                              | 0.20 |                                           |             |                    |          |           |      |          |      |

|                        |                                 |      |                                           |             |                    |          |           |      |          |      |
|------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>   | SampType: <b>LCS</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b> | Batch ID: <b>A33817</b>         |      | RunNo: <b>33817</b>                       |             |                    |          |           |      |          |      |
| Prep Date:             | Analysis Date: <b>4/26/2016</b> |      | SeqNo: <b>1041687</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride               | 0.52                            | 0.10 | 0.5000                                    | 0           | 104                | 90       | 110       |      |          |      |
| Chloride               | 4.9                             | 0.50 | 5.000                                     | 0           | 98.8               | 90       | 110       |      |          |      |
| Bromide                | 2.4                             | 0.10 | 2.500                                     | 0           | 94.3               | 90       | 110       |      |          |      |
| Nitrate+Nitrite as N   | 3.5                             | 0.20 | 3.500                                     | 0           | 99.6               | 90       | 110       |      |          |      |

|                       |                                 |      |                                           |             |                    |          |           |      |          |      |
|-----------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>   | SampType: <b>MBLK</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b> | Batch ID: <b>R33890</b>         |      | RunNo: <b>33890</b>                       |             |                    |          |           |      |          |      |
| Prep Date:            | Analysis Date: <b>4/28/2016</b> |      | SeqNo: <b>1043762</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte               | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Sulfate               | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |

|                        |                                 |      |                                           |             |                    |          |           |      |          |      |
|------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>   | SampType: <b>LCS</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b> | Batch ID: <b>R33890</b>         |      | RunNo: <b>33890</b>                       |             |                    |          |           |      |          |      |
| Prep Date:             | Analysis Date: <b>4/28/2016</b> |      | SeqNo: <b>1043763</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Sulfate                | 9.5                             | 0.50 | 10.00                                     | 0           | 95.3               | 90       | 110       |      |          |      |

|                                   |                                 |      |                                           |             |                    |          |           |      |          |      |
|-----------------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>               | SampType: <b>mblk</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b>             | Batch ID: <b>R33917</b>         |      | RunNo: <b>33917</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                        | Analysis Date: <b>4/29/2016</b> |      | SeqNo: <b>1044764</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                           | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Phosphorus, Orthophosphate (As P) | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A69

23-May-16

**Client:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff Seeps 4-22-16

|                                   |                                 |      |                                           |             |                    |          |           |      |          |      |
|-----------------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>              | SampType: <b>ics</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b>            | Batch ID: <b>R33917</b>         |      | RunNo: <b>33917</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                        | Analysis Date: <b>4/29/2016</b> |      | SeqNo: <b>1044765</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                           | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Phosphorus, Orthophosphate (As P) | 4.9                             | 0.50 | 5.000                                     | 0           | 98.0               | 90       | 110       |      |          |      |

|                                   |                                |      |                                           |             |                    |          |           |      |          |      |
|-----------------------------------|--------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>               | SampType: <b>mblk</b>          |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b>             | Batch ID: <b>R33940</b>        |      | RunNo: <b>33940</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                        | Analysis Date: <b>5/2/2016</b> |      | SeqNo: <b>1045762</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                           | Result                         | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Phosphorus, Orthophosphate (As P) | ND                             | 0.50 |                                           |             |                    |          |           |      |          |      |

|                                   |                                |      |                                           |             |                    |          |           |      |          |      |
|-----------------------------------|--------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>              | SampType: <b>ics</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b>            | Batch ID: <b>R33940</b>        |      | RunNo: <b>33940</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                        | Analysis Date: <b>5/2/2016</b> |      | SeqNo: <b>1045763</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                           | Result                         | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Phosphorus, Orthophosphate (As P) | 4.9                            | 0.50 | 5.000                                     | 0           | 97.5               | 90       | 110       |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A69

23-May-16

**Client:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff Seeps 4-22-16

|                             |                |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|----------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1604a69-001ams |     | SampType: MS             |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | Seep-1         |     | Batch ID: A33873         |             | RunNo: 33873                                    |          |             |      |          |      |
| Prep Date:                  |                |     | Analysis Date: 4/28/2016 |             | SeqNo: 1043428                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result         | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 21             | 1.0 | 20.00                    | 0           | 103                                             | 70       | 130         |      |          |      |
| Toluene                     | 19             | 1.0 | 20.00                    | 0           | 95.4                                            | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10             |     | 10.00                    |             | 103                                             | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10             |     | 10.00                    |             | 103                                             | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 11             |     | 10.00                    |             | 108                                             | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.3            |     | 10.00                    |             | 93.5                                            | 70       | 130         |      |          |      |

|                             |                 |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|-----------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1604a69-001amsd |     | SampType: MSD            |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | Seep-1          |     | Batch ID: A33873         |             | RunNo: 33873                                    |          |             |      |          |      |
| Prep Date:                  |                 |     | Analysis Date: 4/28/2016 |             | SeqNo: 1043429                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result          | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 20              | 1.0 | 20.00                    | 0           | 101                                             | 70       | 130         | 1.58 | 20       |      |
| Toluene                     | 18              | 1.0 | 20.00                    | 0           | 92.2                                            | 70       | 130         | 3.38 | 20       |      |
| Surr: 1,2-Dichloroethane-d4 | 10              |     | 10.00                    |             | 101                                             | 70       | 130         | 0    | 0        |      |
| Surr: 4-Bromofluorobenzene  | 10              |     | 10.00                    |             | 104                                             | 70       | 130         | 0    | 0        |      |
| Surr: Dibromofluoromethane  | 10              |     | 10.00                    |             | 103                                             | 70       | 130         | 0    | 0        |      |
| Surr: Toluene-d8            | 9.7             |     | 10.00                    |             | 97.2                                            | 70       | 130         | 0    | 0        |      |

|                             |            |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs2 |     | SampType: LCS            |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | LCSW       |     | Batch ID: A33873         |             | RunNo: 33873                                    |          |             |      |          |      |
| Prep Date:                  |            |     | Analysis Date: 4/28/2016 |             | SeqNo: 1043432                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result     | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 18         | 1.0 | 20.00                    | 0           | 90.4                                            | 70       | 130         |      |          |      |
| Toluene                     | 20         | 1.0 | 20.00                    | 0           | 100                                             | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10         |     | 10.00                    |             | 101                                             | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10         |     | 10.00                    |             | 101                                             | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.9        |     | 10.00                    |             | 99.2                                            | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 10         |     | 10.00                    |             | 105                                             | 70       | 130         |      |          |      |

|                                |        |                |           |             |           |                                       |           |      |          |      |
|--------------------------------|--------|----------------|-----------|-------------|-----------|---------------------------------------|-----------|------|----------|------|
| Sample ID                      | rb3    | SampType:      | MBLK      |             | TestCode: | EPA Method 8260: Volatiles Short List |           |      |          |      |
| Client ID:                     | PBW    | Batch ID:      | A33873    |             | RunNo:    | 33873                                 |           |      |          |      |
| Prep Date:                     |        | Analysis Date: | 4/29/2016 |             | SeqNo:    | 1043435                               | Units:    | µg/L |          |      |
| Analyte                        | Result | PQL            | SPK value | SPK Ref Val | %REC      | LowLimit                              | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0            |           |             |           |                                       |           |      |          |      |
| Toluene                        | ND     | 1.0            |           |             |           |                                       |           |      |          |      |
| Ethylbenzene                   | ND     | 1.0            |           |             |           |                                       |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0            |           |             |           |                                       |           |      |          |      |

### Qualifiers:

- |                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A69

23-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff Seeps 4-22-16

|                             |        |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|--------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | rb3    | SampType:      | MBLK      | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | PBW    | Batch ID:      | A33873    | RunNo:      | 33873                                 |          |           |      |          |      |
| Prep Date:                  |        | Analysis Date: | 4/29/2016 | SeqNo:      | 1043435                               | Units:   | µg/L      |      |          |      |
| Analyte                     | Result | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Xylenes, Total              | ND     | 1.5            |           |             |                                       |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.4    |                | 10.00     |             | 94.1                                  | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 11     |                | 10.00     |             | 107                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.8    |                | 10.00     |             | 98.3                                  | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 11     |                | 10.00     |             | 106                                   | 70       | 130       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A69

23-May-16

**Client:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff Seeps 4-22-16

|                             |                                 |       |                                      |             |                          |          |           |      |          |      |
|-----------------------------|---------------------------------|-------|--------------------------------------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID <b>mb-1</b>       | SampType: <b>mbk</b>            |       | TestCode: <b>SM2320B: Alkalinity</b> |             |                          |          |           |      |          |      |
| Client ID: <b>PBW</b>       | Batch ID: <b>R33846</b>         |       | RunNo: <b>33846</b>                  |             |                          |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>4/27/2016</b> |       | SeqNo: <b>1042626</b>                |             | Units: <b>mg/L CaCO3</b> |          |           |      |          |      |
| Analyte                     | Result                          | PQL   | SPK value                            | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | ND                              | 20.00 |                                      |             |                          |          |           |      |          |      |

|                             |                                 |       |                                      |             |                          |          |           |      |          |      |
|-----------------------------|---------------------------------|-------|--------------------------------------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID <b>lcs-1</b>      | SampType: <b>lcs</b>            |       | TestCode: <b>SM2320B: Alkalinity</b> |             |                          |          |           |      |          |      |
| Client ID: <b>LCSW</b>      | Batch ID: <b>R33846</b>         |       | RunNo: <b>33846</b>                  |             |                          |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>4/27/2016</b> |       | SeqNo: <b>1042627</b>                |             | Units: <b>mg/L CaCO3</b> |          |           |      |          |      |
| Analyte                     | Result                          | PQL   | SPK value                            | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 84.68                           | 20.00 | 80.00                                | 0           | 106                      | 90       | 110       |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



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

## Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1604A69

RcptNo: 1

Received by/date:

AG 04/23/16

Logged By:

Lindsay Mangin

4/23/2016 8:45:00 AM

Completed By:

Lindsay Mangin

4/25/2016 12:12:57 PM

Reviewed By:

JA 04/25/16

*[Signature]*  
*[Signature]*

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved bottles checked for pH: 2  
( $<2$  or  $>12$  unless noted)  
Adjusted? No  
Checked by: JA

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0                     | Good      | Yes         |         |           |           |



# Chain-of-Custody Record

Client: Western Refining

Mailing Address: 50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☐ Standard

☐ Other

☒ EDD (Type)

☒ Level 4 (Full Validation)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: San Juan River Bluff Seeps

4-22-16

Project #: Semit Annual

PO# 12615521

Project Manager:

Kelly Robinson

Sampler: M. Wicker

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

Date Time Matrix Sample Request ID

4/22/16 1120

H<sub>2</sub>O

Seep - 3

Seep - 3

Seep - 3

Seep - 3

Seep - 3

Seep - 3

Seep - 3

Seep - 3

Seep - 3

Seep - 3

Seep - 3

Seep - 3

Seep - 3

Container Type and #

3-VOA

1-250 ml

1-500 ml

Preservative Type

HCl

H<sub>2</sub>SO<sub>4</sub>

HEAL No.

16041A09

-003

-003

-003

BTX + MTBE + TMB's (6021)

BTX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH (8310 or 8270SIMS)

RCRA 6 Metals

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / 8082 PCB's

8260B (VOA) BTEX, MTBE only

8270 (Semi-VOA)

Alkalinity, CO<sub>2</sub>

Air Bubbles (Y or N)

## Analysis Request

Date: 4/22/16

Time: 1145

Reinquired by: Kelly Robinson

Received by: Christina Wade

Date: 4/22/16

Time: 1648

Date: 4/22/16

Time: 1840

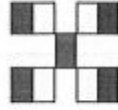
Reinquired by: Christina Wade

Received by: Christina Wade

Date: 4/23/16

Time: 0845

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107



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

May 24, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: San Juan River 4-22-16

OrderNo.: 1604A62

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/23/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604A62

Date Reported: 5/24/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Upstream

Project: San Juan River 4-22-16

Collection Date: 4/22/2016 10:00:00 AM

Lab ID: 1604A62-001

Matrix: AQUEOUS

Received Date: 4/23/2016 8:45:00 AM

| Analyses                                  | Result  | PQL      | Qual | Units | DF | Date Analyzed         |
|-------------------------------------------|---------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>     |         |          |      |       |    | Analyst: KJH          |
| Diesel Range Organics (DRO)               | ND      | 0.20     |      | mg/L  | 1  | 4/26/2016 8:51:12 AM  |
| Motor Oil Range Organics (MRO)            | ND      | 2.5      |      | mg/L  | 1  | 4/26/2016 8:51:12 AM  |
| Surr: DNOP                                | 95.9    | 63.2-161 |      | %Rec  | 1  | 4/26/2016 8:51:12 AM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>   |         |          |      |       |    | Analyst: NSB          |
| Gasoline Range Organics (GRO)             | ND      | 0.050    |      | mg/L  | 1  | 4/26/2016 11:59:59 AM |
| Surr: BFB                                 | 90.9    | 66.4-120 |      | %Rec  | 1  | 4/26/2016 11:59:59 AM |
| <b>EPA METHOD 300.0: ANIONS</b>           |         |          |      |       |    | Analyst: JRR          |
| Fluoride                                  | 0.20    | 0.10     |      | mg/L  | 1  | 4/30/2016 1:40:05 AM  |
| Chloride                                  | 3.3     | 0.50     |      | mg/L  | 1  | 4/30/2016 1:40:05 AM  |
| Bromide                                   | ND      | 0.10     |      | mg/L  | 1  | 4/30/2016 1:40:05 AM  |
| Phosphorus, Orthophosphate (As P')        | ND      | 0.50     | H    | mg/L  | 1  | 4/30/2016 1:40:05 AM  |
| Sulfate                                   | 75      | 10       |      | mg/L  | 20 | 4/30/2016 1:52:29 AM  |
| Nitrate+Nitrite as N                      | ND      | 1.0      |      | mg/L  | 5  | 4/30/2016 3:19:23 AM  |
| <b>EPA METHOD 200.7: DISSOLVED METALS</b> |         |          |      |       |    | Analyst: ELS          |
| Aluminum                                  | ND      | 0.020    |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Barium                                    | 0.072   | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Boron                                     | ND      | 0.040    |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Cadmium                                   | ND      | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Calcium                                   | 39      | 1.0      |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Chromium                                  | ND      | 0.0060   |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Cobalt                                    | ND      | 0.0060   |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Copper                                    | ND      | 0.0060   |      | mg/L  | 1  | 5/2/2016 3:35:12 PM   |
| Iron                                      | ND      | 0.020    |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Magnesium                                 | 5.9     | 1.0      |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Manganese                                 | 0.012   | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Molybdenum                                | ND      | 0.0080   |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Nickel                                    | ND      | 0.010    |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Potassium                                 | 1.7     | 1.0      |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Silver                                    | ND      | 0.0050   |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Sodium                                    | 26      | 1.0      |      | mg/L  | 1  | 4/29/2016 5:28:28 PM  |
| Zinc                                      | 0.016   | 0.010    |      | mg/L  | 1  | 5/2/2016 3:35:12 PM   |
| <b>EPA 200.8: DISSOLVED METALS</b>        |         |          |      |       |    | Analyst: JLF          |
| Arsenic                                   | ND      | 0.0010   |      | mg/L  | 1  | 5/5/2016 9:20:22 PM   |
| Lead                                      | ND      | 0.00050  |      | mg/L  | 1  | 5/5/2016 9:20:22 PM   |
| Selenium                                  | ND      | 0.0010   |      | mg/L  | 1  | 5/5/2016 9:20:22 PM   |
| Uranium                                   | 0.00076 | 0.00050  |      | mg/L  | 1  | 5/5/2016 9:20:22 PM   |
| <b>EPA METHOD 7470: MERCURY</b>           |         |          |      |       |    | Analyst: pmf          |

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

|             |    |                                                       |    |                                                           |
|-------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| Qualifiers: | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|             | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|             | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|             | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|             | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|             | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|             |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A62**

Date Reported: **5/24/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Upstream

**Project:** San Juan River 4-22-16

**Collection Date:** 4/22/2016 10:00:00 AM

**Lab ID:** 1604A62-001

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL     | Qual | Units      | DF | Date Analyzed         |
|----------------------------------------------|--------|---------|------|------------|----|-----------------------|
| <b>EPA METHOD 7470: MERCURY</b>              |        |         |      |            |    | Analyst: <b>pmf</b>   |
| Mercury                                      | ND     | 0.00020 |      | mg/L       | 1  | 4/29/2016 11:40:07 AM |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b>   |        |         |      |            |    | Analyst: <b>MED</b>   |
| Arsenic                                      | ND     | 0.020   |      | mg/L       | 1  | 5/3/2016 11:31:43 AM  |
| Barium                                       | 0.080  | 0.020   |      | mg/L       | 1  | 5/3/2016 11:31:43 AM  |
| Cadmium                                      | ND     | 0.0020  |      | mg/L       | 1  | 5/3/2016 11:31:43 AM  |
| Chromium                                     | ND     | 0.0060  |      | mg/L       | 1  | 5/3/2016 11:31:43 AM  |
| Lead                                         | ND     | 0.0050  |      | mg/L       | 1  | 5/3/2016 11:31:43 AM  |
| Selenium                                     | ND     | 0.050   |      | mg/L       | 1  | 5/3/2016 11:31:43 AM  |
| Silver                                       | ND     | 0.0050  |      | mg/L       | 1  | 5/3/2016 11:31:43 AM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |         |      |            |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0     |      | µg/L       | 1  | 4/26/2016 9:21:28 PM  |
| Toluene                                      | ND     | 1.0     |      | µg/L       | 1  | 4/26/2016 9:21:28 PM  |
| Ethylbenzene                                 | ND     | 1.0     |      | µg/L       | 1  | 4/26/2016 9:21:28 PM  |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0     |      | µg/L       | 1  | 4/26/2016 9:21:28 PM  |
| Xylenes, Total                               | ND     | 1.5     |      | µg/L       | 1  | 4/26/2016 9:21:28 PM  |
| Surr: 1,2-Dichloroethane-d4                  | 100    | 70-130  |      | %Rec       | 1  | 4/26/2016 9:21:28 PM  |
| Surr: 4-Bromofluorobenzene                   | 104    | 70-130  |      | %Rec       | 1  | 4/26/2016 9:21:28 PM  |
| Surr: Dibromofluoromethane                   | 91.0   | 70-130  |      | %Rec       | 1  | 4/26/2016 9:21:28 PM  |
| Surr: Toluene-d8                             | 107    | 70-130  |      | %Rec       | 1  | 4/26/2016 9:21:28 PM  |
| <b>CARBON DIOXIDE</b>                        |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Total Carbon Dioxide                         | 86     | 1.0     | H    | mg CO2/L   | 1  | 4/27/2016 3:30:41 PM  |
| <b>SM2510B: SPECIFIC CONDUCTANCE</b>         |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Conductivity                                 | 380    | 1.0     |      | µmhos/cm   | 1  | 4/27/2016 3:30:41 PM  |
| <b>SM2320B: ALKALINITY</b>                   |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Bicarbonate (As CaCO3)                       | 95.32  | 20.00   |      | mg/L CaCO3 | 1  | 4/27/2016 3:30:41 PM  |
| Carbonate (As CaCO3)                         | ND     | 2.000   |      | mg/L CaCO3 | 1  | 4/27/2016 3:30:41 PM  |
| Total Alkalinity (as CaCO3)                  | 95.32  | 20.00   |      | mg/L CaCO3 | 1  | 4/27/2016 3:30:41 PM  |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>   |        |         |      |            |    | Analyst: <b>KS</b>    |
| Total Dissolved Solids                       | 240    | 20.0    |      | mg/L       | 1  | 4/27/2016 9:53:00 PM  |

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

|                    |                                                         |                                                             |
|--------------------|---------------------------------------------------------|-------------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
|                    | D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
|                    | H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
|                    | ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
|                    | R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
|                    | S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1604A62

Date Reported: 5/24/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Trip Blank

**Project:** San Juan River 4-22-16

**Collection Date:**

**Lab ID:** 1604A62-002

**Matrix:** TRIP BLANK

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 10:47:59 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 10:47:59 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 10:47:59 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 4/26/2016 10:47:59 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 4/26/2016 10:47:59 PM |
| Surr: 1,2-Dichloroethane-d4                  | 99.5   | 70-130 |      | %Rec  | 1  | 4/26/2016 10:47:59 PM |
| Surr: 4-Bromofluorobenzene                   | 93.9   | 70-130 |      | %Rec  | 1  | 4/26/2016 10:47:59 PM |
| Surr: Dibromofluoromethane                   | 104    | 70-130 |      | %Rec  | 1  | 4/26/2016 10:47:59 PM |
| Surr: Toluene-d8                             | 97.3   | 70-130 |      | %Rec  | 1  | 4/26/2016 10:47:59 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604A62

Date Reported: 5/24/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Downstream

Project: San Juan River 4-22-16

Collection Date: 4/22/2016 12:50:00 PM

Lab ID: 1604A62-003

Matrix: AQUEOUS

Received Date: 4/23/2016 8:45:00 AM

| Analyses                                  | Result  | PQL      | Qual | Units | DF | Date Analyzed         |
|-------------------------------------------|---------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>     |         |          |      |       |    | Analyst: KJH          |
| Diesel Range Organics (DRO)               | ND      | 0.20     |      | mg/L  | 1  | 4/26/2016 9:12:48 AM  |
| Motor Oil Range Organics (MRO)            | ND      | 2.5      |      | mg/L  | 1  | 4/26/2016 9:12:48 AM  |
| Surr: DNOP                                | 99.4    | 63.2-161 |      | %Rec  | 1  | 4/26/2016 9:12:48 AM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>   |         |          |      |       |    | Analyst: NSB          |
| Gasoline Range Organics (GRO)             | ND      | 0.050    |      | mg/L  | 1  | 4/26/2016 12:24:36 PM |
| Surr: BFB                                 | 90.1    | 66.4-120 |      | %Rec  | 1  | 4/26/2016 12:24:36 PM |
| <b>EPA METHOD 300.0: ANIONS</b>           |         |          |      |       |    | Analyst: JRR          |
| Fluoride                                  | 0.19    | 0.10     |      | mg/L  | 1  | 4/30/2016 2:04:54 AM  |
| Chloride                                  | 3.4     | 0.50     |      | mg/L  | 1  | 4/30/2016 2:04:54 AM  |
| Bromide                                   | ND      | 0.10     |      | mg/L  | 1  | 4/30/2016 2:04:54 AM  |
| Phosphorus, Orthophosphate (As P')        | ND      | 0.50     | H    | mg/L  | 1  | 4/30/2016 2:04:54 AM  |
| Sulfate                                   | 84      | 10       |      | mg/L  | 20 | 4/30/2016 2:17:19 AM  |
| Nitrate+Nitrite as N                      | ND      | 1.0      |      | mg/L  | 5  | 4/30/2016 4:09:02 AM  |
| <b>EPA METHOD 200.7: DISSOLVED METALS</b> |         |          |      |       |    | Analyst: ELS          |
| Aluminum                                  | ND      | 0.020    |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Barium                                    | 0.072   | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Boron                                     | ND      | 0.040    |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Cadmium                                   | ND      | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Calcium                                   | 41      | 1.0      |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Chromium                                  | ND      | 0.0060   |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Cobalt                                    | ND      | 0.0060   |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Copper                                    | ND      | 0.0060   |      | mg/L  | 1  | 5/2/2016 3:43:13 PM   |
| Iron                                      | 0.031   | 0.020    |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Magnesium                                 | 6.2     | 1.0      |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Manganese                                 | 0.029   | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Molybdenum                                | ND      | 0.0080   |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Nickel                                    | ND      | 0.010    |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Potassium                                 | 1.9     | 1.0      |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Silver                                    | ND      | 0.0050   |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Sodium                                    | 29      | 1.0      |      | mg/L  | 1  | 4/29/2016 5:32:26 PM  |
| Zinc                                      | 0.013   | 0.010    |      | mg/L  | 1  | 5/2/2016 3:43:13 PM   |
| <b>EPA 200.8: DISSOLVED METALS</b>        |         |          |      |       |    | Analyst: JLF          |
| Arsenic                                   | ND      | 0.0010   |      | mg/L  | 1  | 5/5/2016 9:23:25 PM   |
| Lead                                      | ND      | 0.00050  |      | mg/L  | 1  | 5/5/2016 9:23:25 PM   |
| Selenium                                  | ND      | 0.0010   |      | mg/L  | 1  | 5/5/2016 9:23:25 PM   |
| Uranium                                   | 0.00084 | 0.00050  |      | mg/L  | 1  | 5/5/2016 9:23:25 PM   |
| <b>EPA METHOD 7470: MERCURY</b>           |         |          |      |       |    | Analyst: pmf          |

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

|             |    |                                                       |    |                                                           |
|-------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| Qualifiers: | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|             | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|             | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|             | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|             | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|             | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|             |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A62**

Date Reported: **5/24/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Downstream

**Project:** San Juan River 4-22-16

**Collection Date:** 4/22/2016 12:50:00 PM

**Lab ID:** 1604A62-003

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL     | Qual | Units      | DF | Date Analyzed         |
|----------------------------------------------|--------|---------|------|------------|----|-----------------------|
| <b>EPA METHOD 7470: MERCURY</b>              |        |         |      |            |    | Analyst: <b>pmf</b>   |
| Mercury                                      | ND     | 0.00020 |      | mg/L       | 1  | 4/29/2016 11:42:12 AM |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b>   |        |         |      |            |    | Analyst: <b>MED</b>   |
| Arsenic                                      | ND     | 0.020   |      | mg/L       | 1  | 5/3/2016 11:33:18 AM  |
| Barium                                       | 0.082  | 0.020   |      | mg/L       | 1  | 5/3/2016 11:33:18 AM  |
| Cadmium                                      | ND     | 0.0020  |      | mg/L       | 1  | 5/3/2016 11:33:18 AM  |
| Chromium                                     | ND     | 0.0060  |      | mg/L       | 1  | 5/3/2016 11:33:18 AM  |
| Lead                                         | ND     | 0.0050  |      | mg/L       | 1  | 5/3/2016 11:33:18 AM  |
| Selenium                                     | ND     | 0.050   |      | mg/L       | 1  | 5/3/2016 11:33:18 AM  |
| Silver                                       | ND     | 0.0050  |      | mg/L       | 1  | 5/3/2016 11:33:18 AM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |         |      |            |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0     |      | µg/L       | 1  | 4/27/2016 1:11:49 AM  |
| Toluene                                      | ND     | 1.0     |      | µg/L       | 1  | 4/27/2016 1:11:49 AM  |
| Ethylbenzene                                 | ND     | 1.0     |      | µg/L       | 1  | 4/27/2016 1:11:49 AM  |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0     |      | µg/L       | 1  | 4/28/2016 4:14:26 PM  |
| Xylenes, Total                               | ND     | 1.5     |      | µg/L       | 1  | 4/27/2016 1:11:49 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 99.8   | 70-130  |      | %Rec       | 1  | 4/27/2016 1:11:49 AM  |
| Surr: 4-Bromofluorobenzene                   | 105    | 70-130  |      | %Rec       | 1  | 4/27/2016 1:11:49 AM  |
| Surr: Dibromofluoromethane                   | 90.8   | 70-130  |      | %Rec       | 1  | 4/27/2016 1:11:49 AM  |
| Surr: Toluene-d8                             | 98.1   | 70-130  |      | %Rec       | 1  | 4/27/2016 1:11:49 AM  |
| <b>CARBON DIOXIDE</b>                        |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Total Carbon Dioxide                         | 87     | 1.0     | H    | mg CO2/L   | 1  | 4/27/2016 3:39:10 PM  |
| <b>SM2510B: SPECIFIC CONDUCTANCE</b>         |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Conductivity                                 | 400    | 1.0     |      | µmhos/cm   | 1  | 4/27/2016 3:39:10 PM  |
| <b>SM2320B: ALKALINITY</b>                   |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Bicarbonate (As CaCO3)                       | 96.84  | 20.00   |      | mg/L CaCO3 | 1  | 4/27/2016 3:39:10 PM  |
| Carbonate (As CaCO3)                         | ND     | 2.000   |      | mg/L CaCO3 | 1  | 4/27/2016 3:39:10 PM  |
| Total Alkalinity (as CaCO3)                  | 96.84  | 20.00   |      | mg/L CaCO3 | 1  | 4/27/2016 3:39:10 PM  |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>   |        |         |      |            |    | Analyst: <b>KS</b>    |
| Total Dissolved Solids                       | 254    | 20.0    |      | mg/L       | 1  | 4/27/2016 9:53:00 PM  |

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

|                    |                                                         |                                                             |
|--------------------|---------------------------------------------------------|-------------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
|                    | D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
|                    | H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
|                    | ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
|                    | R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
|                    | S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A62**

Date Reported: **5/24/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** North of 45

**Project:** San Juan River 4-22-16

**Collection Date:** 4/22/2016 10:40:00 AM

**Lab ID:** 1604A62-004

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                  | Result  | PQL      | Qual | Units | DF | Date Analyzed         |
|-------------------------------------------|---------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>     |         |          |      |       |    | Analyst: <b>KJH</b>   |
| Diesel Range Organics (DRO)               | ND      | 0.20     |      | mg/L  | 1  | 4/26/2016 9:34:14 AM  |
| Motor Oil Range Organics (MRO)            | ND      | 2.5      |      | mg/L  | 1  | 4/26/2016 9:34:14 AM  |
| Surr: DNOP                                | 97.4    | 63.2-161 |      | %Rec  | 1  | 4/26/2016 9:34:14 AM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>   |         |          |      |       |    | Analyst: <b>NSB</b>   |
| Gasoline Range Organics (GRO)             | ND      | 0.050    |      | mg/L  | 1  | 4/26/2016 12:49:20 PM |
| Surr: BFB                                 | 88.4    | 66.4-120 |      | %Rec  | 1  | 4/26/2016 12:49:20 PM |
| <b>EPA METHOD 300.0: ANIONS</b>           |         |          |      |       |    | Analyst: <b>JRR</b>   |
| Fluoride                                  | 0.20    | 0.10     |      | mg/L  | 1  | 4/30/2016 2:29:44 AM  |
| Chloride                                  | 3.3     | 0.50     |      | mg/L  | 1  | 4/30/2016 2:29:44 AM  |
| Bromide                                   | ND      | 0.10     |      | mg/L  | 1  | 4/30/2016 2:29:44 AM  |
| Phosphorus, Orthophosphate (As P')        | ND      | 0.50     | H    | mg/L  | 1  | 4/30/2016 2:29:44 AM  |
| Sulfate                                   | 78      | 10       |      | mg/L  | 20 | 4/30/2016 2:42:08 AM  |
| Nitrate+Nitrite as N                      | ND      | 1.0      |      | mg/L  | 5  | 4/30/2016 4:21:27 AM  |
| <b>EPA METHOD 200.7: DISSOLVED METALS</b> |         |          |      |       |    | Analyst: <b>ELS</b>   |
| Aluminum                                  | ND      | 0.020    |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Barium                                    | 0.073   | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Boron                                     | ND      | 0.040    |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Cadmium                                   | ND      | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Calcium                                   | 39      | 1.0      |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Chromium                                  | ND      | 0.0060   |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Cobalt                                    | ND      | 0.0060   |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Copper                                    | ND      | 0.0060   |      | mg/L  | 1  | 5/2/2016 3:45:10 PM   |
| Iron                                      | ND      | 0.020    |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Magnesium                                 | 6.1     | 1.0      |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Manganese                                 | 0.011   | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Molybdenum                                | ND      | 0.0080   |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Nickel                                    | ND      | 0.010    |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Potassium                                 | 1.8     | 1.0      |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Silver                                    | ND      | 0.0050   |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Sodium                                    | 27      | 1.0      |      | mg/L  | 1  | 4/29/2016 5:43:56 PM  |
| Zinc                                      | 0.014   | 0.010    |      | mg/L  | 1  | 5/2/2016 3:45:10 PM   |
| <b>EPA 200.8: DISSOLVED METALS</b>        |         |          |      |       |    | Analyst: <b>JLF</b>   |
| Arsenic                                   | ND      | 0.0010   |      | mg/L  | 1  | 5/11/2016 7:46:48 PM  |
| Lead                                      | ND      | 0.00050  |      | mg/L  | 1  | 5/11/2016 7:46:48 PM  |
| Selenium                                  | ND      | 0.0010   |      | mg/L  | 1  | 5/11/2016 7:46:48 PM  |
| Uranium                                   | 0.00076 | 0.00050  |      | mg/L  | 1  | 5/11/2016 7:46:48 PM  |
| <b>EPA METHOD 7470: MERCURY</b>           |         |          |      |       |    | Analyst: <b>pmf</b>   |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A62**

Date Reported: **5/24/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** North of 45

**Project:** San Juan River 4-22-16

**Collection Date:** 4/22/2016 10:40:00 AM

**Lab ID:** 1604A62-004

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL     | Qual | Units      | DF | Date Analyzed         |
|----------------------------------------------|--------|---------|------|------------|----|-----------------------|
| <b>EPA METHOD 7470: MERCURY</b>              |        |         |      |            |    | Analyst: <b>pmf</b>   |
| Mercury                                      | ND     | 0.00020 |      | mg/L       | 1  | 4/29/2016 11:44:19 AM |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b>   |        |         |      |            |    | Analyst: <b>MED</b>   |
| Arsenic                                      | ND     | 0.020   |      | mg/L       | 1  | 5/3/2016 11:34:51 AM  |
| Barium                                       | 0.080  | 0.020   |      | mg/L       | 1  | 5/3/2016 11:34:51 AM  |
| Cadmium                                      | ND     | 0.0020  |      | mg/L       | 1  | 5/3/2016 11:34:51 AM  |
| Chromium                                     | ND     | 0.0060  |      | mg/L       | 1  | 5/3/2016 11:34:51 AM  |
| Lead                                         | ND     | 0.0050  |      | mg/L       | 1  | 5/3/2016 11:34:51 AM  |
| Selenium                                     | ND     | 0.050   |      | mg/L       | 1  | 5/3/2016 11:34:51 AM  |
| Silver                                       | ND     | 0.0050  |      | mg/L       | 1  | 5/3/2016 11:34:51 AM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |         |      |            |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0     |      | µg/L       | 1  | 4/27/2016 1:40:39 AM  |
| Toluene                                      | ND     | 1.0     |      | µg/L       | 1  | 4/27/2016 1:40:39 AM  |
| Ethylbenzene                                 | ND     | 1.0     |      | µg/L       | 1  | 4/27/2016 1:40:39 AM  |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0     |      | µg/L       | 1  | 4/28/2016 4:43:21 PM  |
| Xylenes, Total                               | ND     | 1.5     |      | µg/L       | 1  | 4/27/2016 1:40:39 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 102    | 70-130  |      | %Rec       | 1  | 4/27/2016 1:40:39 AM  |
| Surr: 4-Bromofluorobenzene                   | 96.7   | 70-130  |      | %Rec       | 1  | 4/27/2016 1:40:39 AM  |
| Surr: Dibromofluoromethane                   | 96.6   | 70-130  |      | %Rec       | 1  | 4/27/2016 1:40:39 AM  |
| Surr: Toluene-d8                             | 97.2   | 70-130  |      | %Rec       | 1  | 4/27/2016 1:40:39 AM  |
| <b>CARBON DIOXIDE</b>                        |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Total Carbon Dioxide                         | 86     | 1.0     | H    | mg CO2/L   | 1  | 4/27/2016 3:47:16 PM  |
| <b>SM2510B: SPECIFIC CONDUCTANCE</b>         |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Conductivity                                 | 380    | 1.0     |      | µmhos/cm   | 1  | 4/27/2016 3:47:16 PM  |
| <b>SM2320B: ALKALINITY</b>                   |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Bicarbonate (As CaCO3)                       | 95.44  | 20.00   |      | mg/L CaCO3 | 1  | 4/27/2016 3:47:16 PM  |
| Carbonate (As CaCO3)                         | ND     | 2.000   |      | mg/L CaCO3 | 1  | 4/27/2016 3:47:16 PM  |
| Total Alkalinity (as CaCO3)                  | 95.44  | 20.00   |      | mg/L CaCO3 | 1  | 4/27/2016 3:47:16 PM  |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>   |        |         |      |            |    | Analyst: <b>KS</b>    |
| Total Dissolved Solids                       | 246    | 20.0    |      | mg/L       | 1  | 4/27/2016 9:53:00 PM  |

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

|                    |                                                         |                                                             |
|--------------------|---------------------------------------------------------|-------------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
|                    | D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
|                    | H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
|                    | ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
|                    | R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
|                    | S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A62**

Date Reported: **5/24/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** North of 46

**Project:** San Juan River 4-22-16

**Collection Date:** 4/22/2016 11:35:00 AM

**Lab ID:** 1604A62-005

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                  | Result  | PQL      | Qual | Units | DF | Date Analyzed        |
|-------------------------------------------|---------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>     |         |          |      |       |    | Analyst: <b>KJH</b>  |
| Diesel Range Organics (DRO)               | ND      | 0.20     |      | mg/L  | 1  | 4/26/2016 9:55:49 AM |
| Motor Oil Range Organics (MRO)            | ND      | 2.5      |      | mg/L  | 1  | 4/26/2016 9:55:49 AM |
| Surr: DNOP                                | 96.5    | 63.2-161 |      | %Rec  | 1  | 4/26/2016 9:55:49 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>   |         |          |      |       |    | Analyst: <b>NSB</b>  |
| Gasoline Range Organics (GRO)             | ND      | 0.050    |      | mg/L  | 1  | 4/26/2016 1:14:03 PM |
| Surr: BFB                                 | 89.3    | 66.4-120 |      | %Rec  | 1  | 4/26/2016 1:14:03 PM |
| <b>EPA METHOD 300.0: ANIONS</b>           |         |          |      |       |    | Analyst: <b>JRR</b>  |
| Fluoride                                  | 0.19    | 0.10     |      | mg/L  | 1  | 4/30/2016 2:54:33 AM |
| Chloride                                  | 3.5     | 0.50     |      | mg/L  | 1  | 4/30/2016 2:54:33 AM |
| Bromide                                   | ND      | 0.10     |      | mg/L  | 1  | 4/30/2016 2:54:33 AM |
| Phosphorus, Orthophosphate (As P')        | ND      | 0.50     | H    | mg/L  | 1  | 4/30/2016 2:54:33 AM |
| Sulfate                                   | 80      | 10       |      | mg/L  | 20 | 4/30/2016 3:06:58 AM |
| Nitrate+Nitrite as N                      | ND      | 1.0      |      | mg/L  | 5  | 4/30/2016 4:33:52 AM |
| <b>EPA METHOD 200.7: DISSOLVED METALS</b> |         |          |      |       |    | Analyst: <b>ELS</b>  |
| Aluminum                                  | ND      | 0.020    |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Barium                                    | 0.074   | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Boron                                     | ND      | 0.040    |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Cadmium                                   | ND      | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Calcium                                   | 40      | 1.0      |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Chromium                                  | ND      | 0.0060   |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Cobalt                                    | ND      | 0.0060   |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Copper                                    | ND      | 0.0060   |      | mg/L  | 1  | 5/2/2016 3:47:08 PM  |
| Iron                                      | 0.022   | 0.020    |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Magnesium                                 | 6.1     | 1.0      |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Manganese                                 | 0.0097  | 0.0020   |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Molybdenum                                | ND      | 0.0080   |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Nickel                                    | ND      | 0.010    |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Potassium                                 | 1.9     | 1.0      |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Silver                                    | ND      | 0.0050   |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Sodium                                    | 27      | 1.0      |      | mg/L  | 1  | 4/29/2016 5:47:50 PM |
| Zinc                                      | 0.024   | 0.010    |      | mg/L  | 1  | 5/2/2016 3:47:08 PM  |
| <b>EPA 200.8: DISSOLVED METALS</b>        |         |          |      |       |    | Analyst: <b>JLF</b>  |
| Arsenic                                   | ND      | 0.0010   |      | mg/L  | 1  | 5/11/2016 7:51:56 PM |
| Lead                                      | ND      | 0.00050  |      | mg/L  | 1  | 5/11/2016 7:51:56 PM |
| Selenium                                  | ND      | 0.0010   |      | mg/L  | 1  | 5/11/2016 7:51:56 PM |
| Uranium                                   | 0.00078 | 0.00050  |      | mg/L  | 1  | 5/11/2016 7:51:56 PM |
| <b>EPA METHOD 7470: MERCURY</b>           |         |          |      |       |    | Analyst: <b>pmf</b>  |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1604A62**

Date Reported: **5/24/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** North of 46

**Project:** San Juan River 4-22-16

**Collection Date:** 4/22/2016 11:35:00 AM

**Lab ID:** 1604A62-005

**Matrix:** AQUEOUS

**Received Date:** 4/23/2016 8:45:00 AM

| Analyses                                     | Result | PQL     | Qual | Units      | DF | Date Analyzed         |
|----------------------------------------------|--------|---------|------|------------|----|-----------------------|
| <b>EPA METHOD 7470: MERCURY</b>              |        |         |      |            |    | Analyst: <b>pmf</b>   |
| Mercury                                      | ND     | 0.00020 |      | mg/L       | 1  | 4/29/2016 11:46:26 AM |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b>   |        |         |      |            |    | Analyst: <b>MED</b>   |
| Arsenic                                      | ND     | 0.020   |      | mg/L       | 1  | 5/3/2016 11:36:25 AM  |
| Barium                                       | 0.078  | 0.020   |      | mg/L       | 1  | 5/3/2016 11:36:25 AM  |
| Cadmium                                      | ND     | 0.0020  |      | mg/L       | 1  | 5/3/2016 11:36:25 AM  |
| Chromium                                     | ND     | 0.0060  |      | mg/L       | 1  | 5/3/2016 11:36:25 AM  |
| Lead                                         | ND     | 0.0050  |      | mg/L       | 1  | 5/3/2016 11:36:25 AM  |
| Selenium                                     | ND     | 0.050   |      | mg/L       | 1  | 5/3/2016 11:36:25 AM  |
| Silver                                       | ND     | 0.0050  |      | mg/L       | 1  | 5/3/2016 11:36:25 AM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |         |      |            |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0     |      | µg/L       | 1  | 4/27/2016 2:09:25 AM  |
| Toluene                                      | ND     | 1.0     |      | µg/L       | 1  | 4/27/2016 2:09:25 AM  |
| Ethylbenzene                                 | ND     | 1.0     |      | µg/L       | 1  | 4/27/2016 2:09:25 AM  |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0     |      | µg/L       | 1  | 4/28/2016 5:12:17 PM  |
| Xylenes, Total                               | ND     | 1.5     |      | µg/L       | 1  | 4/27/2016 2:09:25 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 96.4   | 70-130  |      | %Rec       | 1  | 4/27/2016 2:09:25 AM  |
| Surr: 4-Bromofluorobenzene                   | 103    | 70-130  |      | %Rec       | 1  | 4/27/2016 2:09:25 AM  |
| Surr: Dibromofluoromethane                   | 86.7   | 70-130  |      | %Rec       | 1  | 4/27/2016 2:09:25 AM  |
| Surr: Toluene-d8                             | 102    | 70-130  |      | %Rec       | 1  | 4/27/2016 2:09:25 AM  |
| <b>CARBON DIOXIDE</b>                        |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Total Carbon Dioxide                         | 86     | 1.0     | H    | mg CO2/L   | 1  | 4/27/2016 3:55:34 PM  |
| <b>SM2510B: SPECIFIC CONDUCTANCE</b>         |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Conductivity                                 | 380    | 1.0     |      | µmhos/cm   | 1  | 4/27/2016 3:55:34 PM  |
| <b>SM2320B: ALKALINITY</b>                   |        |         |      |            |    | Analyst: <b>JRR</b>   |
| Bicarbonate (As CaCO3)                       | 95.48  | 20.00   |      | mg/L CaCO3 | 1  | 4/27/2016 3:55:34 PM  |
| Carbonate (As CaCO3)                         | ND     | 2.000   |      | mg/L CaCO3 | 1  | 4/27/2016 3:55:34 PM  |
| Total Alkalinity (as CaCO3)                  | 95.48  | 20.00   |      | mg/L CaCO3 | 1  | 4/27/2016 3:55:34 PM  |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>   |        |         |      |            |    | Analyst: <b>KS</b>    |
| Total Dissolved Solids                       | 245    | 20.0    |      | mg/L       | 1  | 4/27/2016 9:53:00 PM  |

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

|                    |                                                         |                                                             |
|--------------------|---------------------------------------------------------|-------------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
|                    | D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
|                    | H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
|                    | ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
|                    | R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
|                    | S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-16

|            |             |                |                  |           |                                           |        |             |  |  |  |
|------------|-------------|----------------|------------------|-----------|-------------------------------------------|--------|-------------|--|--|--|
| Sample ID  | <b>MB-A</b> | SampType:      | <b>MBLK</b>      | TestCode: | <b>EPA Method 200.7: Dissolved Metals</b> |        |             |  |  |  |
| Client ID: | <b>PBW</b>  | Batch ID:      | <b>A33899</b>    | RunNo:    | <b>33899</b>                              |        |             |  |  |  |
| Prep Date: |             | Analysis Date: | <b>4/29/2016</b> | SeqNo:    | <b>1044209</b>                            | Units: | <b>mg/L</b> |  |  |  |

| 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 |           |             |      |          |           |      |          |      |
| Calcium    | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Chromium   | ND     | 0.0060 |           |             |      |          |           |      |          |      |
| Cobalt     | ND     | 0.0060 |           |             |      |          |           |      |          |      |
| Iron       | ND     | 0.020  |           |             |      |          |           |      |          |      |
| Magnesium  | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Manganese  | ND     | 0.0020 |           |             |      |          |           |      |          |      |
| Molybdenum | ND     | 0.0080 |           |             |      |          |           |      |          |      |
| Nickel     | ND     | 0.010  |           |             |      |          |           |      |          |      |
| Potassium  | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Silver     | ND     | 0.0050 |           |             |      |          |           |      |          |      |
| Sodium     | ND     | 1.0    |           |             |      |          |           |      |          |      |

|            |              |                |                  |           |                                           |        |             |  |  |  |
|------------|--------------|----------------|------------------|-----------|-------------------------------------------|--------|-------------|--|--|--|
| Sample ID  | <b>LCS-A</b> | SampType:      | <b>LCS</b>       | TestCode: | <b>EPA Method 200.7: Dissolved Metals</b> |        |             |  |  |  |
| Client ID: | <b>LCSW</b>  | Batch ID:      | <b>A33899</b>    | RunNo:    | <b>33899</b>                              |        |             |  |  |  |
| Prep Date: |              | Analysis Date: | <b>4/29/2016</b> | SeqNo:    | <b>1044210</b>                            | Units: | <b>mg/L</b> |  |  |  |

| Analyte    | Result | PQL    | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|------------|--------|--------|-----------|-------------|------|----------|-----------|------|----------|------|
| Aluminum   | 0.51   | 0.020  | 0.5000    | 0           | 102  | 85       | 115       |      |          |      |
| Barium     | 0.49   | 0.0020 | 0.5000    | 0           | 97.6 | 85       | 115       |      |          |      |
| Boron      | 0.50   | 0.040  | 0.5000    | 0           | 100  | 85       | 115       |      |          |      |
| Cadmium    | 0.48   | 0.0020 | 0.5000    | 0           | 96.9 | 85       | 115       |      |          |      |
| Calcium    | 51     | 1.0    | 50.00     | 0           | 101  | 85       | 115       |      |          |      |
| Chromium   | 0.48   | 0.0060 | 0.5000    | 0           | 96.6 | 85       | 115       |      |          |      |
| Cobalt     | 0.47   | 0.0060 | 0.5000    | 0           | 94.0 | 85       | 115       |      |          |      |
| Iron       | 0.50   | 0.020  | 0.5000    | 0           | 101  | 85       | 115       |      |          |      |
| Magnesium  | 49     | 1.0    | 50.00     | 0           | 97.5 | 85       | 115       |      |          |      |
| Manganese  | 0.48   | 0.0020 | 0.5000    | 0           | 96.2 | 85       | 115       |      |          |      |
| Molybdenum | 0.50   | 0.0080 | 0.5000    | 0           | 99.9 | 85       | 115       |      |          |      |
| Nickel     | 0.47   | 0.010  | 0.5000    | 0           | 94.3 | 85       | 115       |      |          |      |
| Potassium  | 47     | 1.0    | 50.00     | 0           | 94.8 | 85       | 115       |      |          |      |
| Silver     | 0.098  | 0.0050 | 0.1000    | 0           | 97.9 | 85       | 115       |      |          |      |
| Sodium     | 47     | 1.0    | 50.00     | 0           | 93.9 | 85       | 115       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

**Client:** Western Refining Southwest, Inc.

**Project:** San Juan River 4-22-16

| Sample ID <b>LLLCS-A</b>  | SampType: <b>LCSLL</b>          |        |           | TestCode: <b>EPA Method 200.7: Dissolved Metals</b> |      |          |                    |      |          |      |
|---------------------------|---------------------------------|--------|-----------|-----------------------------------------------------|------|----------|--------------------|------|----------|------|
| Client ID: <b>BatchQC</b> | Batch ID: <b>A33899</b>         |        |           | RunNo: <b>33899</b>                                 |      |          |                    |      |          |      |
| Prep Date:                | Analysis Date: <b>4/29/2016</b> |        |           | SeqNo: <b>1044211</b>                               |      |          | Units: <b>mg/L</b> |      |          |      |
| Analyte                   | Result                          | PQL    | SPK value | SPK Ref Val                                         | %REC | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Aluminum                  | ND                              | 0.020  | 0.01000   | 0                                                   | 73.1 | 50       | 150                |      |          |      |
| Barium                    | 0.0026                          | 0.0020 | 0.002000  | 0                                                   | 129  | 50       | 150                |      |          |      |
| Boron                     | 0.041                           | 0.040  | 0.04000   | 0                                                   | 102  | 50       | 150                |      |          |      |
| Cadmium                   | ND                              | 0.0020 | 0.002000  | 0                                                   | 98.5 | 50       | 150                |      |          |      |
| Calcium                   | ND                              | 1.0    | 0.5000    | 0                                                   | 111  | 50       | 150                |      |          |      |
| Chromium                  | 0.0068                          | 0.0060 | 0.006000  | 0                                                   | 114  | 50       | 150                |      |          |      |
| Cobalt                    | 0.0064                          | 0.0060 | 0.006000  | 0                                                   | 107  | 50       | 150                |      |          |      |
| Iron                      | 0.022                           | 0.020  | 0.02000   | 0                                                   | 111  | 50       | 150                |      |          |      |
| Magnesium                 | ND                              | 1.0    | 0.5000    | 0                                                   | 103  | 50       | 150                |      |          |      |
| Manganese                 | 0.0022                          | 0.0020 | 0.002000  | 0                                                   | 112  | 50       | 150                |      |          |      |
| Molybdenum                | 0.010                           | 0.0080 | 0.008000  | 0                                                   | 129  | 50       | 150                |      |          |      |
| Nickel                    | ND                              | 0.010  | 0.005000  | 0                                                   | 95.4 | 50       | 150                |      |          |      |
| Potassium                 | ND                              | 1.0    | 0.5000    | 0                                                   | 93.3 | 50       | 150                |      |          |      |
| Silver                    | 0.0054                          | 0.0050 | 0.005000  | 0                                                   | 107  | 50       | 150                |      |          |      |
| Sodium                    | ND                              | 1.0    | 0.5000    | 0                                                   | 97.3 | 50       | 150                |      |          |      |

| Sample ID <b>MB-B</b> | SampType: <b>MBLK</b>          |        |           | TestCode: <b>EPA Method 200.7: Dissolved Metals</b> |      |          |                    |      |          |      |
|-----------------------|--------------------------------|--------|-----------|-----------------------------------------------------|------|----------|--------------------|------|----------|------|
| Client ID: <b>PBW</b> | Batch ID: <b>B33919</b>        |        |           | RunNo: <b>33919</b>                                 |      |          |                    |      |          |      |
| Prep Date:            | Analysis Date: <b>5/2/2016</b> |        |           | SeqNo: <b>1044932</b>                               |      |          | Units: <b>mg/L</b> |      |          |      |
| Analyte               | Result                         | PQL    | SPK value | SPK Ref Val                                         | %REC | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Copper                | ND                             | 0.0060 |           |                                                     |      |          |                    |      |          |      |
| Zinc                  | ND                             | 0.010  |           |                                                     |      |          |                    |      |          |      |

| Sample ID <b>LCS-B</b> | SampType: <b>LCS</b>           |        |           | TestCode: <b>EPA Method 200.7: Dissolved Metals</b> |      |          |                    |      |          |      |
|------------------------|--------------------------------|--------|-----------|-----------------------------------------------------|------|----------|--------------------|------|----------|------|
| Client ID: <b>LCSW</b> | Batch ID: <b>B33919</b>        |        |           | RunNo: <b>33919</b>                                 |      |          |                    |      |          |      |
| Prep Date:             | Analysis Date: <b>5/2/2016</b> |        |           | SeqNo: <b>1044936</b>                               |      |          | Units: <b>mg/L</b> |      |          |      |
| Analyte                | Result                         | PQL    | SPK value | SPK Ref Val                                         | %REC | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Copper                 | 0.47                           | 0.0060 | 0.5000    | 0                                                   | 94.8 | 85       | 115                |      |          |      |
| Zinc                   | 0.51                           | 0.010  | 0.5000    | 0                                                   | 103  | 85       | 115                |      |          |      |

| Sample ID <b>LLLCS-B</b>  | SampType: <b>LCSLL</b>         |        |           | TestCode: <b>EPA Method 200.7: Dissolved Metals</b> |      |          |                    |      |          |      |
|---------------------------|--------------------------------|--------|-----------|-----------------------------------------------------|------|----------|--------------------|------|----------|------|
| Client ID: <b>BatchQC</b> | Batch ID: <b>B33919</b>        |        |           | RunNo: <b>33919</b>                                 |      |          |                    |      |          |      |
| Prep Date:                | Analysis Date: <b>5/2/2016</b> |        |           | SeqNo: <b>1044937</b>                               |      |          | Units: <b>mg/L</b> |      |          |      |
| Analyte                   | Result                         | PQL    | SPK value | SPK Ref Val                                         | %REC | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Copper                    | ND                             | 0.0060 | 0.006000  | 0                                                   | 90.2 | 50       | 150                |      |          |      |
| Zinc                      | ND                             | 0.010  | 0.005000  | 0                                                   | 117  | 50       | 150                |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

**Client:** Western Refining Southwest, Inc.

**Project:** San Juan River 4-22-16

| Sample ID <b>LCS</b>   | SampType: <b>LCS</b>           |         |           |             | TestCode: <b>EPA 200.8: Dissolved Metals</b> |          |                    |      |          |      |
|------------------------|--------------------------------|---------|-----------|-------------|----------------------------------------------|----------|--------------------|------|----------|------|
| Client ID: <b>LCSW</b> | Batch ID: <b>B34025</b>        |         |           |             | RunNo: <b>34025</b>                          |          |                    |      |          |      |
| Prep Date:             | Analysis Date: <b>5/5/2016</b> |         |           |             | SeqNo: <b>1048522</b>                        |          | Units: <b>mg/L</b> |      |          |      |
| Analyte                | Result                         | PQL     | SPK value | SPK Ref Val | %REC                                         | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Arsenic                | 0.025                          | 0.0010  | 0.02500   | 0           | 101                                          | 85       | 115                |      |          |      |
| Lead                   | 0.012                          | 0.00050 | 0.01250   | 0           | 99.9                                         | 85       | 115                |      |          |      |
| Selenium               | 0.025                          | 0.0010  | 0.02500   | 0           | 98.8                                         | 85       | 115                |      |          |      |
| Uranium                | 0.013                          | 0.00050 | 0.01250   | 0           | 104                                          | 85       | 115                |      |          |      |

| Sample ID <b>LLCS</b>     | SampType: <b>LCSLL</b>         |         |           |             | TestCode: <b>EPA 200.8: Dissolved Metals</b> |          |                    |      |          |      |
|---------------------------|--------------------------------|---------|-----------|-------------|----------------------------------------------|----------|--------------------|------|----------|------|
| Client ID: <b>BatchQC</b> | Batch ID: <b>B34025</b>        |         |           |             | RunNo: <b>34025</b>                          |          |                    |      |          |      |
| Prep Date:                | Analysis Date: <b>5/5/2016</b> |         |           |             | SeqNo: <b>1048523</b>                        |          | Units: <b>mg/L</b> |      |          |      |
| Analyte                   | Result                         | PQL     | SPK value | SPK Ref Val | %REC                                         | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Arsenic                   | 0.0010                         | 0.0010  | 0.001000  | 0           | 100                                          | 50       | 150                |      |          |      |
| Lead                      | ND                             | 0.00050 | 0.0005000 | 0           | 99.8                                         | 50       | 150                |      |          |      |
| Selenium                  | ND                             | 0.0010  | 0.001000  | 0           | 94.2                                         | 50       | 150                |      |          |      |
| Uranium                   | ND                             | 0.00050 | 0.0005000 | 0           | 99.9                                         | 50       | 150                |      |          |      |

| Sample ID <b>MB</b>   | SampType: <b>MBLK</b>          |         |           |             | TestCode: <b>EPA 200.8: Dissolved Metals</b> |          |                    |      |          |      |
|-----------------------|--------------------------------|---------|-----------|-------------|----------------------------------------------|----------|--------------------|------|----------|------|
| Client ID: <b>PBW</b> | Batch ID: <b>B34025</b>        |         |           |             | RunNo: <b>34025</b>                          |          |                    |      |          |      |
| Prep Date:            | Analysis Date: <b>5/5/2016</b> |         |           |             | SeqNo: <b>1048524</b>                        |          | Units: <b>mg/L</b> |      |          |      |
| Analyte               | Result                         | PQL     | SPK value | SPK Ref Val | %REC                                         | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Arsenic               | ND                             | 0.0010  |           |             |                                              |          |                    |      |          |      |
| Lead                  | ND                             | 0.00050 |           |             |                                              |          |                    |      |          |      |
| Selenium              | ND                             | 0.0010  |           |             |                                              |          |                    |      |          |      |
| Uranium               | ND                             | 0.00050 |           |             |                                              |          |                    |      |          |      |

| Sample ID <b>MB</b>   | SampType: <b>MBLK</b>           |         |           |             | TestCode: <b>EPA 200.8: Dissolved Metals</b> |          |                    |      |          |      |
|-----------------------|---------------------------------|---------|-----------|-------------|----------------------------------------------|----------|--------------------|------|----------|------|
| Client ID: <b>PBW</b> | Batch ID: <b>B34157</b>         |         |           |             | RunNo: <b>34157</b>                          |          |                    |      |          |      |
| Prep Date:            | Analysis Date: <b>5/11/2016</b> |         |           |             | SeqNo: <b>1053221</b>                        |          | Units: <b>mg/L</b> |      |          |      |
| Analyte               | Result                          | PQL     | SPK value | SPK Ref Val | %REC                                         | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Arsenic               | ND                              | 0.0010  |           |             |                                              |          |                    |      |          |      |
| Lead                  | ND                              | 0.00050 |           |             |                                              |          |                    |      |          |      |
| Selenium              | ND                              | 0.0010  |           |             |                                              |          |                    |      |          |      |
| Uranium               | ND                              | 0.00050 |           |             |                                              |          |                    |      |          |      |

| Sample ID <b>LCS</b>   | SampType: <b>LCS</b>            |     |           |             | TestCode: <b>EPA 200.8: Dissolved Metals</b> |          |                    |      |          |      |
|------------------------|---------------------------------|-----|-----------|-------------|----------------------------------------------|----------|--------------------|------|----------|------|
| Client ID: <b>LCSW</b> | Batch ID: <b>B34157</b>         |     |           |             | RunNo: <b>34157</b>                          |          |                    |      |          |      |
| Prep Date:             | Analysis Date: <b>5/11/2016</b> |     |           |             | SeqNo: <b>1053222</b>                        |          | Units: <b>mg/L</b> |      |          |      |
| Analyte                | Result                          | PQL | SPK value | SPK Ref Val | %REC                                         | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |

### Qualifiers:

- |                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-16

|            |        |         |                          |             |                                       |          |             |      |          |      |
|------------|--------|---------|--------------------------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS    |         | SampType: LCS            |             | TestCode: EPA 200.8: Dissolved Metals |          |             |      |          |      |
| Client ID: | LCSW   |         | Batch ID: B34157         |             | RunNo: 34157                          |          |             |      |          |      |
| Prep Date: |        |         | Analysis Date: 5/11/2016 |             | SeqNo: 1053222                        |          | 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           | 97.3                                  | 85       | 115         |      |          |      |
| Lead       | 0.012  | 0.00050 | 0.01250                  | 0           | 99.8                                  | 85       | 115         |      |          |      |
| Selenium   | 0.024  | 0.0010  | 0.02500                  | 0           | 94.3                                  | 85       | 115         |      |          |      |
| Uranium    | 0.013  | 0.00050 | 0.01250                  | 0           | 107                                   | 85       | 115         |      |          |      |

|            |         |         |           |                |           |          |           |                                       |          |             |  |
|------------|---------|---------|-----------|----------------|-----------|----------|-----------|---------------------------------------|----------|-------------|--|
| Sample ID  | LLCS    |         |           | SampType:      | LCSLL     |          |           | TestCode: EPA 200.8: Dissolved Metals |          |             |  |
| Client ID: | BatchQC |         |           | Batch ID:      | B34157    |          |           | RunNo: 34157                          |          |             |  |
| Prep Date: |         |         |           | Analysis Date: | 5/11/2016 |          |           | SeqNo: 1053223                        |          | Units: mg/L |  |
| Analyte    | Result  | PQL     | SPK value | SPK Ref Val    | %REC      | LowLimit | HighLimit | %RPD                                  | RPDLimit | Qual        |  |
| Arsenic    | ND      | 0.0010  | 0.001000  | 0              | 98.0      | 50       | 150       |                                       |          |             |  |
| Lead       | 0.00052 | 0.00050 | 0.0005000 | 0              | 104       | 50       | 150       |                                       |          |             |  |
| Selenium   | ND      | 0.0010  | 0.001000  | 0              | 93.2      | 50       | 150       |                                       |          |             |  |
| Uranium    | 0.00054 | 0.00050 | 0.0005000 | 0              | 108       | 50       | 150       |                                       |          |             |  |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-16

|                                  |                                 |      |                                           |             |                    |          |           |      |          |      |
|----------------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>              | SampType: <b>mbk</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b>            | Batch ID: <b>R34165</b>         |      | RunNo: <b>34165</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                       | Analysis Date: <b>4/29/2016</b> |      | SeqNo: <b>1053421</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                          | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                         | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Chloride                         | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |
| Bromide                          | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Phosphorus, Orthophosphate (As P | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |
| Sulfate                          | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |
| Nitrate+Nitrite as N             | ND                              | 0.20 |                                           |             |                    |          |           |      |          |      |

|                                  |                                 |      |                                           |             |                    |          |           |      |          |      |
|----------------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>             | SampType: <b>lcs</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b>           | Batch ID: <b>R34165</b>         |      | RunNo: <b>34165</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                       | Analysis Date: <b>4/29/2016</b> |      | SeqNo: <b>1053422</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                          | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                         | 0.51                            | 0.10 | 0.5000                                    | 0           | 102                | 90       | 110       |      |          |      |
| Chloride                         | 4.9                             | 0.50 | 5.000                                     | 0           | 97.1               | 90       | 110       |      |          |      |
| Bromide                          | 2.5                             | 0.10 | 2.500                                     | 0           | 99.9               | 90       | 110       |      |          |      |
| Phosphorus, Orthophosphate (As P | 5.0                             | 0.50 | 5.000                                     | 0           | 101                | 90       | 110       |      |          |      |
| Sulfate                          | 9.9                             | 0.50 | 10.00                                     | 0           | 98.9               | 90       | 110       |      |          |      |
| Nitrate+Nitrite as N             | 3.5                             | 0.20 | 3.500                                     | 0           | 98.8               | 90       | 110       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-16

|                             |           |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-24970 |      | SampType: LCS            |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |      | Batch ID: 24970          |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                  | 4/25/2016 |      | Analysis Date: 4/25/2016 |             | SeqNo: 1039867                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.8       | 0.20 | 2.500                    | 0           | 153                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.31      |      | 0.2500                   |             | 124                                      | 63.2     | 161         |      |          |      |

|                                |           |      |                          |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-24970  |      | SampType: MBLK           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       |      | Batch ID: 24970          |             | RunNo: 33768                             |          |             |      |          |      |
| Prep Date:                     | 4/25/2016 |      | Analysis Date: 4/25/2016 |             | SeqNo: 1039868                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20 |                          |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5  |                          |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.56      |      | 0.5000                   |             | 112                                      | 63.2     | 161         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-16

|                               |        |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 5ML RB | SampType:      | MBLK      | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | PBW    | Batch ID:      | A33804    | RunNo:      | 33804                            |          |           |      |          |      |
| Prep Date:                    |        | Analysis Date: | 4/26/2016 | SeqNo:      | 1041252                          | 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     |             | 89.9                             | 66.4     | 120       |      |          |      |

|                               |               |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 2.5UG GRO LCS | SampType:      | LCS       | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | LCSW          | Batch ID:      | A33804    | RunNo:      | 33804                            |          |           |      |          |      |
| Prep Date:                    |               | Analysis Date: | 4/26/2016 | SeqNo:      | 1041253                          | Units:   | mg/L      |      |          |      |
| Analyte                       | Result        | PQL            | SPK value | SPK Ref Val | %REC                             | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.47          | 0.050          | 0.5000    | 0           | 94.2                             | 80       | 120       |      |          |      |
| Surr: BFB                     | 21            |                | 20.00     |             | 105                              | 66.4     | 120       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-16

|                                |            |     |                |                  |      |           |                                              |        |             |      |
|--------------------------------|------------|-----|----------------|------------------|------|-----------|----------------------------------------------|--------|-------------|------|
| Sample ID                      | <b>rb3</b> |     | SampType:      | <b>MBLK</b>      |      | TestCode: | <b>EPA Method 8260: Volatiles Short List</b> |        |             |      |
| Client ID:                     | <b>PBW</b> |     | Batch ID:      | <b>B33810</b>    |      | RunNo:    | <b>33810</b>                                 |        |             |      |
| Prep Date:                     |            |     | Analysis Date: | <b>4/27/2016</b> |      | SeqNo:    | <b>1041470</b>                               | Units: | <b>µg/L</b> |      |
| Analyte                        | Result     | PQL | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                    | %RPD   | RPDLimit    | Qual |
| Benzene                        | ND         | 1.0 |                |                  |      |           |                                              |        |             |      |
| Toluene                        | ND         | 1.0 |                |                  |      |           |                                              |        |             |      |
| Ethylbenzene                   | ND         | 1.0 |                |                  |      |           |                                              |        |             |      |
| Methyl tert-butyl ether (MTBE) | ND         | 1.0 |                |                  |      |           |                                              |        |             |      |
| Xylenes, Total                 | ND         | 1.5 |                |                  |      |           |                                              |        |             |      |
| Surr: 1,2-Dichloroethane-d4    | 10         |     | 10.00          |                  | 101  | 70        | 130                                          |        |             |      |
| Surr: 4-Bromofluorobenzene     | 10         |     | 10.00          |                  | 104  | 70        | 130                                          |        |             |      |
| Surr: Dibromofluoromethane     | 11         |     | 10.00          |                  | 106  | 70        | 130                                          |        |             |      |
| Surr: Toluene-d8               | 10         |     | 10.00          |                  | 100  | 70        | 130                                          |        |             |      |

|                             |                       |     |                |                  |      |           |                                              |        |             |      |
|-----------------------------|-----------------------|-----|----------------|------------------|------|-----------|----------------------------------------------|--------|-------------|------|
| Sample ID                   | <b>1604a62-001ams</b> |     | SampType:      | <b>MS</b>        |      | TestCode: | <b>EPA Method 8260: Volatiles Short List</b> |        |             |      |
| Client ID:                  | <b>Upstream</b>       |     | Batch ID:      | <b>B33810</b>    |      | RunNo:    | <b>33810</b>                                 |        |             |      |
| Prep Date:                  |                       |     | Analysis Date: | <b>4/26/2016</b> |      | SeqNo:    | <b>1041505</b>                               | Units: | <b>µg/L</b> |      |
| Analyte                     | Result                | PQL | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                    | %RPD   | RPDLimit    | Qual |
| Benzene                     | 20                    | 1.0 | 20.00          | 0                | 102  | 70        | 130                                          |        |             |      |
| Toluene                     | 19                    | 1.0 | 20.00          | 0                | 97.0 | 70        | 130                                          |        |             |      |
| Surr: 1,2-Dichloroethane-d4 | 9.7                   |     | 10.00          |                  | 96.5 | 70        | 130                                          |        |             |      |
| Surr: 4-Bromofluorobenzene  | 10                    |     | 10.00          |                  | 101  | 70        | 130                                          |        |             |      |
| Surr: Dibromofluoromethane  | 9.2                   |     | 10.00          |                  | 92.4 | 70        | 130                                          |        |             |      |
| Surr: Toluene-d8            | 9.8                   |     | 10.00          |                  | 97.7 | 70        | 130                                          |        |             |      |

|                             |                        |     |                |                  |      |           |                                              |        |             |      |
|-----------------------------|------------------------|-----|----------------|------------------|------|-----------|----------------------------------------------|--------|-------------|------|
| Sample ID                   | <b>1604a62-001amsd</b> |     | SampType:      | <b>MSD</b>       |      | TestCode: | <b>EPA Method 8260: Volatiles Short List</b> |        |             |      |
| Client ID:                  | <b>Upstream</b>        |     | Batch ID:      | <b>B33810</b>    |      | RunNo:    | <b>33810</b>                                 |        |             |      |
| Prep Date:                  |                        |     | Analysis Date: | <b>4/26/2016</b> |      | SeqNo:    | <b>1041506</b>                               | Units: | <b>µg/L</b> |      |
| Analyte                     | Result                 | PQL | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                    | %RPD   | RPDLimit    | Qual |
| Benzene                     | 21                     | 1.0 | 20.00          | 0                | 103  | 70        | 130                                          | 0.317  | 20          |      |
| Toluene                     | 20                     | 1.0 | 20.00          | 0                | 100  | 70        | 130                                          | 3.51   | 20          |      |
| Surr: 1,2-Dichloroethane-d4 | 10                     |     | 10.00          |                  | 103  | 70        | 130                                          | 0      | 0           |      |
| Surr: 4-Bromofluorobenzene  | 9.8                    |     | 10.00          |                  | 97.6 | 70        | 130                                          | 0      | 0           |      |
| Surr: Dibromofluoromethane  | 8.9                    |     | 10.00          |                  | 89.1 | 70        | 130                                          | 0      | 0           |      |
| Surr: Toluene-d8            | 10                     |     | 10.00          |                  | 105  | 70        | 130                                          | 0      | 0           |      |

|            |                   |     |                |                  |      |           |                                              |        |             |      |
|------------|-------------------|-----|----------------|------------------|------|-----------|----------------------------------------------|--------|-------------|------|
| Sample ID  | <b>100ng lcs2</b> |     | SampType:      | <b>LCS</b>       |      | TestCode: | <b>EPA Method 8260: Volatiles Short List</b> |        |             |      |
| Client ID: | <b>LCSW</b>       |     | Batch ID:      | <b>B33810</b>    |      | RunNo:    | <b>33810</b>                                 |        |             |      |
| Prep Date: |                   |     | Analysis Date: | <b>4/27/2016</b> |      | SeqNo:    | <b>1042932</b>                               | Units: | <b>µg/L</b> |      |
| Analyte    | Result            | PQL | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                    | %RPD   | RPDLimit    | Qual |
| Benzene    | 21                | 1.0 | 20.00          | 0                | 104  | 70        | 130                                          |        |             |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-16

|                             |            |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs2 |     | SampType: LCS            |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | LCSW       |     | Batch ID: B33810         |             | RunNo: 33810                                    |          |             |      |          |      |
| Prep Date:                  |            |     | Analysis Date: 4/27/2016 |             | SeqNo: 1042932                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result     | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Toluene                     | 20         | 1.0 | 20.00                    | 0           | 102                                             | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10         |     | 10.00                    |             | 102                                             | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10         |     | 10.00                    |             | 104                                             | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 11         |     | 10.00                    |             | 107                                             | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 10         |     | 10.00                    |             | 99.7                                            | 70       | 130         |      |          |      |

|                             |           |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|-----------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs |     | SampType: LCS            |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | LCSW      |     | Batch ID: R33873         |             | RunNo: 33873                                    |          |             |      |          |      |
| Prep Date:                  |           |     | Analysis Date: 4/28/2016 |             | SeqNo: 1043397                                  |          | Units: %Rec |      |          |      |
| Analyte                     | Result    | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: 1,2-Dichloroethane-d4 | 10        |     | 10.00                    |             | 104                                             | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10        |     | 10.00                    |             | 99.9                                            | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 10        |     | 10.00                    |             | 102                                             | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 10        |     | 10.00                    |             | 102                                             | 70       | 130         |      |          |      |

|                                |        |                          |           |                                                 |      |             |           |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------------------------------------------|------|-------------|-----------|------|----------|------|
| Sample ID                      | rb     | SampType: MBLK           |           | TestCode: EPA Method 8260: Volatiles Short List |      |             |           |      |          |      |
| Client ID:                     | PBW    | Batch ID: R33873         |           | RunNo: 33873                                    |      |             |           |      |          |      |
| Prep Date:                     |        | Analysis Date: 4/28/2016 |           | SeqNo: 1043400                                  |      | Units: µg/L |           |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val                                     | %REC | LowLimit    | HighLimit | %RPD | RPDLimit | Qual |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |                                                 |      |             |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.7    |                          | 10.00     |                                                 | 96.6 | 70          | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene     | 10     |                          | 10.00     |                                                 | 105  | 70          | 130       |      |          |      |
| Surr: Dibromofluoromethane     | 9.3    |                          | 10.00     |                                                 | 92.8 | 70          | 130       |      |          |      |
| Surr: Toluene-d8               | 9.8    |                          | 10.00     |                                                 | 97.6 | 70          | 130       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-16

|            |           |         |                |             |      |           |                          |      |             |      |  |
|------------|-----------|---------|----------------|-------------|------|-----------|--------------------------|------|-------------|------|--|
| Sample ID  | MB-25066  |         | SampType:      | MBLK        |      | TestCode: | EPA Method 7470: Mercury |      |             |      |  |
| Client ID: | PBW       |         | Batch ID:      | 25066       |      | RunNo:    | 33907                    |      |             |      |  |
| Prep Date: | 4/28/2016 |         | Analysis Date: | 4/29/2016   |      | SeqNo:    | 1044543                  |      | Units: mg/L |      |  |
| Analyte    | Result    | PQL     | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                | %RPD | RPDLimit    | Qual |  |
| Mercurv    | ND        | 0.00020 |                |             |      |           |                          |      |             |      |  |

|            |           |         |           |                |           |          |           |                          |          |        |      |
|------------|-----------|---------|-----------|----------------|-----------|----------|-----------|--------------------------|----------|--------|------|
| Sample ID  | LCS-25066 |         |           | SampType:      | LCS       |          | TestCode: | EPA Method 7470: Mercury |          |        |      |
| Client ID: | LCSW      |         |           | Batch ID:      | 25066     |          | RunNo:    | 33907                    |          |        |      |
| Prep Date: | 4/28/2016 |         |           | Analysis Date: | 4/29/2016 |          | SeqNo:    | 1044544                  |          | Units: | mg/L |
| Analyte    | Result    | PQL     | SPK value | SPK Ref Val    | %REC      | LowLimit | HighLimit | %RPD                     | RPDLimit | Qual   |      |
| Mercury    | 0.0051    | 0.00020 | 0.005000  | 0              | 102       | 80       | 120       |                          |          |        |      |

### Qualifiers:

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R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-16

|            |           |        |                         |             |                                               |          |             |      |          |      |
|------------|-----------|--------|-------------------------|-------------|-----------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-25017  |        | SampType: MBLK          |             | TestCode: EPA 6010B: Total Recoverable Metals |          |             |      |          |      |
| Client ID: | PBW       |        | Batch ID: 25017         |             | RunNo: 33941                                  |          |             |      |          |      |
| Prep Date: | 4/26/2016 |        | Analysis Date: 5/3/2016 |             | SeqNo: 1045834                                |          | Units: mg/L |      |          |      |
| Analyte    | Result    | PQL    | SPK value               | SPK Ref Val | %REC                                          | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Arsenic    | ND        | 0.020  |                         |             |                                               |          |             |      |          |      |
| Barium     | ND        | 0.020  |                         |             |                                               |          |             |      |          |      |
| Cadmium    | ND        | 0.0020 |                         |             |                                               |          |             |      |          |      |
| Chromium   | ND        | 0.0060 |                         |             |                                               |          |             |      |          |      |
| Lead       | ND        | 0.0050 |                         |             |                                               |          |             |      |          |      |
| Selenium   | ND        | 0.050  |                         |             |                                               |          |             |      |          |      |
| Silver     | ND        | 0.0050 |                         |             |                                               |          |             |      |          |      |

|            |           |        |           |                |          |          |                                               |      |             |      |  |
|------------|-----------|--------|-----------|----------------|----------|----------|-----------------------------------------------|------|-------------|------|--|
| Sample ID  | LCS-25017 |        |           | SampType:      | LCS      |          | TestCode: EPA 6010B: Total Recoverable Metals |      |             |      |  |
| Client ID: | LCSW      |        |           | Batch ID:      | 25017    |          | RunNo: 33941                                  |      |             |      |  |
| Prep Date: | 4/26/2016 |        |           | Analysis Date: | 5/3/2016 |          | SeqNo: 1045835                                |      | Units: mg/L |      |  |
| Analyte    | Result    | PQL    | SPK value | SPK Ref Val    | %REC     | LowLimit | HighLimit                                     | %RPD | RPDLimit    | Qual |  |
| Arsenic    | 0.52      | 0.020  | 0.5000    | 0              | 105      | 80       | 120                                           |      |             |      |  |
| Barium     | 0.50      | 0.020  | 0.5000    | 0              | 101      | 80       | 120                                           |      |             |      |  |
| Cadmium    | 0.50      | 0.0020 | 0.5000    | 0              | 101      | 80       | 120                                           |      |             |      |  |
| Chromium   | 0.50      | 0.0060 | 0.5000    | 0              | 99.9     | 80       | 120                                           |      |             |      |  |
| Lead       | 0.51      | 0.0050 | 0.5000    | 0              | 101      | 80       | 120                                           |      |             |      |  |
| Selenium   | 0.51      | 0.050  | 0.5000    | 0              | 102      | 80       | 120                                           |      |             |      |  |
| Silver     | 0.10      | 0.0050 | 0.1000    | 0              | 101      | 80       | 120                                           |      |             |      |  |

### Qualifiers:

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ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-16

|                             |        |       |                |             |      |           |                     |      |          |            |  |
|-----------------------------|--------|-------|----------------|-------------|------|-----------|---------------------|------|----------|------------|--|
| Sample ID                   | mb-1   |       | SampType:      | mblk        |      | TestCode: | SM2320B: Alkalinity |      |          |            |  |
| Client ID:                  | PBW    |       | Batch ID:      | R33846      |      | RunNo:    | 33846               |      |          |            |  |
| Prep Date:                  |        |       | Analysis Date: | 4/27/2016   |      | SeqNo:    | 1042626             |      | Units:   | mg/L CaCO3 |  |
| Analyte                     | Result | PQL   | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit           | %RPD | RPDLimit | Qual       |  |
| Total Alkalinity (as CaCO3) | ND     | 20.00 |                |             |      |           |                     |      |          |            |  |

|                             |        |       |                          |             |                               |          |                   |      |          |      |
|-----------------------------|--------|-------|--------------------------|-------------|-------------------------------|----------|-------------------|------|----------|------|
| Sample ID                   | Ics-1  |       | SampType: Ics            |             | TestCode: SM2320B: Alkalinity |          |                   |      |          |      |
| Client ID:                  | LCSW   |       | Batch ID: R33846         |             | RunNo: 33846                  |          |                   |      |          |      |
| Prep Date:                  |        |       | Analysis Date: 4/27/2016 |             | SeqNo: 1042627                |          | Units: mg/L CaCO3 |      |          |      |
| Analyte                     | Result | PQL   | SPK value                | SPK Ref Val | %REC                          | LowLimit | HighLimit         | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 84.68  | 20.00 | 80.00                    | 0           | 106                           | 90       | 110               |      |          |      |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1604A62

24-May-16

**Client:** Western Refining Southwest, Inc.

**Project:** San Juan River 4-22-16

|                        |                  |                |                  |             |                                            |          |             |      |          |      |
|------------------------|------------------|----------------|------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID              | <b>MB-25006</b>  | SampType:      | <b>MBLK</b>      | TestCode:   | <b>SM2540C MOD: Total Dissolved Solids</b> |          |             |      |          |      |
| Client ID:             | <b>PBW</b>       | Batch ID:      | <b>25006</b>     | RunNo:      | <b>33836</b>                               |          |             |      |          |      |
| Prep Date:             | <b>4/26/2016</b> | Analysis Date: | <b>4/27/2016</b> | SeqNo:      | <b>1042246</b>                             | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                | Result           | PQL            | SPK value        | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | ND               | 20.0           |                  |             |                                            |          |             |      |          |      |

|                        |                  |                |                  |             |                                            |          |             |      |          |      |
|------------------------|------------------|----------------|------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID              | <b>LCS-25006</b> | SampType:      | <b>LCS</b>       | TestCode:   | <b>SM2540C MOD: Total Dissolved Solids</b> |          |             |      |          |      |
| Client ID:             | <b>LCSW</b>      | Batch ID:      | <b>25006</b>     | RunNo:      | <b>33836</b>                               |          |             |      |          |      |
| Prep Date:             | <b>4/26/2016</b> | Analysis Date: | <b>4/27/2016</b> | SeqNo:      | <b>1042247</b>                             | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                | Result           | PQL            | SPK value        | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | 1020             | 20.0           | 1000             | 0           | 102                                        | 80       | 120         |      |          |      |

|                        |                       |                |                  |             |                                            |          |             |      |          |      |
|------------------------|-----------------------|----------------|------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID              | <b>1604A62-003DMS</b> | SampType:      | <b>MS</b>        | TestCode:   | <b>SM2540C MOD: Total Dissolved Solids</b> |          |             |      |          |      |
| Client ID:             | <b>Downstream</b>     | Batch ID:      | <b>25006</b>     | RunNo:      | <b>33836</b>                               |          |             |      |          |      |
| Prep Date:             | <b>4/26/2016</b>      | Analysis Date: | <b>4/27/2016</b> | SeqNo:      | <b>1042265</b>                             | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                | Result                | PQL            | SPK value        | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | 1260                  | 20.0           | 1000             | 254.0       | 101                                        | 80       | 120         |      |          |      |

|                        |                        |                |                  |             |                                            |          |             |       |          |      |
|------------------------|------------------------|----------------|------------------|-------------|--------------------------------------------|----------|-------------|-------|----------|------|
| Sample ID              | <b>1604A62-003DMSD</b> | SampType:      | <b>MSD</b>       | TestCode:   | <b>SM2540C MOD: Total Dissolved Solids</b> |          |             |       |          |      |
| Client ID:             | <b>Downstream</b>      | Batch ID:      | <b>25006</b>     | RunNo:      | <b>33836</b>                               |          |             |       |          |      |
| Prep Date:             | <b>4/26/2016</b>       | Analysis Date: | <b>4/27/2016</b> | SeqNo:      | <b>1042266</b>                             | Units:   | <b>mg/L</b> |       |          |      |
| Analyte                | Result                 | PQL            | SPK value        | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD  | RPDLimit | Qual |
| Total Dissolved Solids | 1270                   | 20.0           | 1000             | 254.0       | 101                                        | 80       | 120         | 0.158 | 5        |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



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

## Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1604A62

RcptNo: 1

Received by/date: AG 04/23/16

Logged By: Lindsay Mangin 4/23/2016 8:45:00 AM *Judy Mangin*

Completed By: Lindsay Mangin 4/25/2016 9:44:49 AM *Judy Mangin*

Reviewed By: *Ja* 04/25/16

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved bottles checked for pH: 12  
( $<2$  or  $>12$  unless noted)  
Adjusted? No  
Checked by: *Ja*

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

|                      |       |       |                                                                                                                               |
|----------------------|-------|-------|-------------------------------------------------------------------------------------------------------------------------------|
| Person Notified:     | _____ | Date: | _____                                                                                                                         |
| By Whom:             | _____ | Via:  | <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person |
| Regarding:           | _____ |       |                                                                                                                               |
| Client Instructions: | _____ |       |                                                                                                                               |

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0     | Good      | Yes         |         |           |           |





# Chain-of-Custody Record

Client: **Western Refining**

Mailing Address: **50 CR 4990**

**Bloomfield, NM 87413**

Phone #: **505-632-4135**

email or Fax#:

QA/QC Package:

☐ Standard

☐ Other

☒ EDD (Type)

**X** Level 4 (Full Validation)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: **San Juan River**

**4-22-16**

Project #: **Semi Annual**

**PO#12615521**

Project Manager:

**Kelly Robinson**

Sampler: **M. Wicker**

On Ice: ☒ Yes ☐ No

Sample Temperature: **10**

| Date    | Time | Matrix           | Sample Request ID | Container Type and # | Preservative Type              | HEAL No.  |
|---------|------|------------------|-------------------|----------------------|--------------------------------|-----------|
| 4-22-16 | 1250 | H <sub>2</sub> O | Downstream        | 3-VOA                | HCl                            | 1120-1162 |
|         |      | H <sub>2</sub> O | Downstream        | 1-liter (125) Amber  | Cool                           | -003      |
|         |      | H <sub>2</sub> O | Downstream        | 1-500 ml             | HNO <sub>3</sub>               | -003      |
|         |      | H <sub>2</sub> O | Downstream        | 2-250 ml             | HNO <sub>3</sub>               | -003      |
|         |      | H <sub>2</sub> O | Downstream        | 1-500 ml             | HNO <sub>3</sub>               | -003      |
|         |      | H <sub>2</sub> O | Downstream        | 1-250 ml             | H <sub>2</sub> SO <sub>4</sub> | -003      |

Date: **4-22-16** Time: **1645**

Date: **4-22-16** Time: **1846**

Relinquished by: **[Signature]**

Relinquished by: **[Signature]**

Received by: **[Signature]** Date: **4/22/16** Time: **1645**

Received by: **[Signature]** Date: **04/23/16** Time: **0845**

| Analysis Request                                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| BTEX + MTBE + TMB's (8021)                                                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |
| BTEX + MTBE + TPH (Gas only)                                                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |
| TPH 8015B (GRO / DRO / MRO)                                                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |
| TPH (Method 418.1)                                                                                                                                                       |  |  |  |  |  |  |  |  |  |  |  |
| EDB (Method 504.1)                                                                                                                                                       |  |  |  |  |  |  |  |  |  |  |  |
| PAH (8310 or 8270SIMS)                                                                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |
| RCRA 8 Metals                                                                                                                                                            |  |  |  |  |  |  |  |  |  |  |  |
| Anions (F <sup>-</sup> , Cl <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , PO <sub>4</sub> <sup>3-</sup> , SO <sub>4</sub> <sup>2-</sup> ) |  |  |  |  |  |  |  |  |  |  |  |
| 8081 Pesticides / 8082 PCB's                                                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |
| 8260B (VOA) BTEX, MTBE only                                                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |
| 8270 (Semi-VOA)                                                                                                                                                          |  |  |  |  |  |  |  |  |  |  |  |
| DRO - 8015B                                                                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |
| WQCC Dissolved Metals                                                                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |
| Cations/Anions, TDS, EC, Alk, CO                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |
| Air Bubbles (Y or N)                                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

# Chain-of-Custody Record

Client: **Western Refining**

Mailing Address: **50 CR 4990**

**Bloomfield, NM 87413**

Phone #: **505-632-4135**

email or Fax#:

QA/QC Package: ☒ Level 4 (Full Validation)

☐ Standard ☐ Other

☒ EDD (Type) \_\_\_\_\_

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: **San Juan River**

**4-22-16**

Project #: **Semi Annual**

**PO#12615521**

Project Manager:

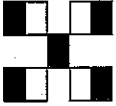
**Kelly Robinson**

Sampler: **M. Wicker**

On Ice: ☒ Yes ☐ No

Sample Temperature: **10**

| Date    | Time | Matrix           | Sample Request ID | Container Type and # | Preservative Type              | HEAL No  |
|---------|------|------------------|-------------------|----------------------|--------------------------------|----------|
| 4-22-16 | 1040 | H <sub>2</sub> O | North of 45       | 6-VOA                | HCl                            | 16024A62 |
|         |      | H <sub>2</sub> O | North of 45       | 4-liter Amber        | Cool                           | -004     |
|         |      | H <sub>2</sub> O | North of 45       | 1-500 ml             | HNO <sub>3</sub>               | -004     |
|         |      | H <sub>2</sub> O | North of 45       | 2-250 ml             | HNO <sub>3</sub>               | -004     |
|         |      | H <sub>2</sub> O | North of 45       | 1-500 ml             |                                | -004     |
|         |      | H <sub>2</sub> O | North of 45       | 1-250 ml             | H <sub>2</sub> SO <sub>4</sub> | -004     |



**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

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Tel. 505-345-3975 Fax 505-345-4107

| Analysis Request                                                                       |  |  |  |  |  |  | Remarks: |  |
|----------------------------------------------------------------------------------------|--|--|--|--|--|--|----------|--|
| BTEX + MTBE + TMBs (8021)                                                              |  |  |  |  |  |  |          |  |
| BTEX + MTBE + TPH (Gas only)                                                           |  |  |  |  |  |  |          |  |
| TPH 8015B (GRO / DRO / MRO)                                                            |  |  |  |  |  |  |          |  |
| TPH (Method 418.1)                                                                     |  |  |  |  |  |  |          |  |
| EDB (Method 504.1)                                                                     |  |  |  |  |  |  |          |  |
| PAH (8310 or 8270SIMS)                                                                 |  |  |  |  |  |  |          |  |
| RCRA 8 Metals                                                                          |  |  |  |  |  |  |          |  |
| Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> ) |  |  |  |  |  |  |          |  |
| 8081 Pesticides / 8082 PCB's                                                           |  |  |  |  |  |  |          |  |
| 8260B (VOA) BTEX, MTBE only                                                            |  |  |  |  |  |  |          |  |
| 8270 (Semi-VOA)                                                                        |  |  |  |  |  |  |          |  |
| DRO - 8015B                                                                            |  |  |  |  |  |  |          |  |
| WQCC Dissolved Metals                                                                  |  |  |  |  |  |  |          |  |
| Cations/Anions, TDS, EC, Alk, CO                                                       |  |  |  |  |  |  |          |  |
| Air Bubbles (Y or N)                                                                   |  |  |  |  |  |  |          |  |

Date: 4-22-16 1145 Relinquished by: *[Signature]*

Date: 4-22-16 1840 Relinquished by: *[Signature]*

Date: 4-23-16 0845 Received by: *[Signature]*

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

|                                                                                                 |                                                                             |                   |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------|
| <b>Chain-of-Custody Record</b>                                                                  |                                                                             | Turn-Around Time: |
| Client: <b>Western Refining</b>                                                                 | <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush  |                   |
| Mailing Address: <b>50 CR 4990</b>                                                              | Project Name: <b>San Juan River</b>                                         |                   |
| <b>Bloomfield, NM 87413</b>                                                                     | <b>4 - 22 - 16</b>                                                          |                   |
| Phone #: <b>505-632-4135</b>                                                                    | Project #: <b>Semi Annual</b>                                               |                   |
| email or Fax#:                                                                                  | <b>PO#12615521</b>                                                          |                   |
| QA/QC Package:                                                                                  | Project Manager:                                                            |                   |
| <input type="checkbox"/> Standard <input checked="" type="checkbox"/> Level 4 (Full Validation) | <b>Kelly Robinson</b>                                                       |                   |
| <input type="checkbox"/> Other                                                                  | Sampler: <b>M. Wicker</b>                                                   |                   |
| <input checked="" type="checkbox"/> EDD (Type) _____                                            | On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                   |
|                                                                                                 | Sample Temperature: _____                                                   |                   |

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: **San Juan River**

4 - 22 - 16

Project #: Semi Annual

**PO#12615521**

Project Manager: **Kelly Robinson**

Sampler: **M. Wicker**

On Ice ☒ Yes ☐ No

Sample Temperature: 10

|                                   |                                    |
|-----------------------------------|------------------------------------|
| <b>Chain-of-Custody Record</b>    |                                    |
| Client:                           | Western Refining                   |
| Mailing Address:                  | 50 CR 4990                         |
|                                   | Bloomfield, NM 87413               |
| Phone #:                          | 505-632-4135                       |
| email or Fax#:                    |                                    |
| QA/QC Package:                    |                                    |
| <input type="checkbox"/> Standard | <b>X</b> Level 4 (Full Validation) |
| <input type="checkbox"/> Other    |                                    |
| <b>X</b> EDD (Type)               |                                    |

| Date    | Time | Matrix           | Sample Request ID | Container Type and # | Preservative Type              | HEAL No |
|---------|------|------------------|-------------------|----------------------|--------------------------------|---------|
| 1-22-16 | 1135 | H <sub>2</sub> O | North of 46       | 6-VOA                | HCl                            | -005    |
|         |      | H <sub>2</sub> O | North of 46       | 4-liter (25) Amber   | Cool                           | -005    |
|         |      | H <sub>2</sub> O | North of 46       | 1-500 ml             | HNO <sub>3</sub>               | -005    |
|         |      | H <sub>2</sub> O | North of 46       | 2-250 ml             | HNO <sub>3</sub>               | -005    |
|         |      | H <sub>2</sub> O | North of 46       | 1-500 ml             |                                | -005    |
|         |      | H <sub>2</sub> O | North of 46       | 1-250 ml             | H <sub>2</sub> SO <sub>4</sub> | -005    |

[illegible]

|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|

|         |       |                    |                    |         |       |
|---------|-------|--------------------|--------------------|---------|-------|
| Date:   | Time: | Relinquished by:   | Received by:       | Date:   | Time: |
| 4-22-16 | 11:45 | <i>[Signature]</i> | <i>[Signature]</i> | 4/22/16 | 16:45 |
| Date:   | Time: | Relinquished by:   | Received by:       | Date:   | Time: |
| 4/22/16 | 18:40 | <i>[Signature]</i> | <i>[Signature]</i> | 4/23/16 | 08:45 |

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this policy.

[illegible]

| | | | □ 5-□ 3 |

|       |       |       |
|-------|-------|-------|
| Black | White | Black |
| White | Black | White |
| Black | White | Black |

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

[illegible]

Remarks:

|                       |                 |              |
|-----------------------|-----------------|--------------|
| Received by:          | Date            | Time         |
| <i>Shirley W. ...</i> | <i>4/22/16</i>  | <i>16:45</i> |
| Received by:          | Date            | Time         |
| <i>[Signature]</i>    | <i>04/22/16</i> | <i>08:45</i> |

|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Relinquished by: |  |
| Date:            | 4-22-16                                                                               |
| Time:            | 11:45                                                                                 |
| Relinquished by: |  |
| Date:            | 4-22-16                                                                               |
| Time:            | 8:40                                                                                  |

if necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



*Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

June 30, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: San Juan River Bluff 5-18-2016

OrderNo.: 1605889

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/19/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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 Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605889

Date Reported: 6/30/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Outfall #2

**Project:** San Juan River Bluff 5-18-2016

**Collection Date:** 5/18/2016 11:15:00 AM

**Lab ID:** 1605889-001

**Matrix:** AQUEOUS

**Received Date:** 5/19/2016 7:35:00 AM

| Analyses                                   | Result  | MDL      | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID |
|--------------------------------------------|---------|----------|---------|------|-------|----|-----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b>            |         |          |         |      |       |    | Analyst: <b>LGT</b>   |          |
| Fluoride                                   | 0.18    | 0.023    | 0.10    |      | mg/L  | 1  | 5/20/2016 12:42:22 AM | R34382   |
| Chloride                                   | 3.4     | 0.027    | 0.50    |      | mg/L  | 1  | 5/20/2016 12:42:22 AM | R34382   |
| Nitrogen, Nitrite (As N)                   | ND      | 0.042    | 0.10    |      | mg/L  | 1  | 5/20/2016 12:42:22 AM | R34382   |
| Bromide                                    | ND      | 0.032    | 0.10    |      | mg/L  | 1  | 5/20/2016 12:42:22 AM | R34382   |
| Nitrogen, Nitrate (As N)                   | 0.17    | 0.042    | 0.10    |      | mg/L  | 1  | 5/20/2016 12:42:22 AM | R34382   |
| Phosphorus, Orthophosphate (As P)          | ND      | 0.22     | 0.50    |      | mg/L  | 1  | 5/20/2016 12:42:22 AM | R34382   |
| Sulfate                                    | 45      | 1.3      | 10      |      | mg/L  | 20 | 5/20/2016 12:54:47 AM | R34382   |
| <b>EPA METHOD 200.7: DISSOLVED METALS</b>  |         |          |         |      |       |    | Analyst: <b>ELS</b>   |          |
| Aluminum                                   | ND      | 0.0038   | 0.020   |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Barium                                     | 0.068   | 0.0013   | 0.0020  |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Boron                                      | 0.023   | 0.0011   | 0.040   | J    | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Cadmium                                    | ND      | 0.00075  | 0.0020  |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Calcium                                    | 37      | 0.26     | 1.0     |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Chromium                                   | ND      | 0.0018   | 0.0060  |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Cobalt                                     | 0.00091 | 0.00074  | 0.0060  | J    | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Copper                                     | ND      | 0.0040   | 0.0060  |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Iron                                       | 0.014   | 0.0091   | 0.020   | J    | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Magnesium                                  | 6.2     | 0.013    | 1.0     |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Manganese                                  | 0.0090  | 0.00032  | 0.0020  |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Molybdenum                                 | ND      | 0.0019   | 0.0080  |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Nickel                                     | ND      | 0.0024   | 0.010   |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Potassium                                  | 1.6     | 0.18     | 1.0     |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Silver                                     | ND      | 0.0028   | 0.0050  |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Sodium                                     | 16      | 0.096    | 1.0     |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| Zinc                                       | 0.020   | 0.0028   | 0.010   |      | mg/L  | 1  | 5/23/2016 12:27:59 PM | A34409   |
| <b>EPA 200.8: DISSOLVED METALS</b>         |         |          |         |      |       |    | Analyst: <b>DBD</b>   |          |
| Arsenic                                    | 0.00087 | 0.00014  | 0.0010  | J    | mg/L  | 1  | 5/23/2016 3:24:27 PM  | B34426   |
| Lead                                       | ND      | 0.00017  | 0.00050 |      | mg/L  | 1  | 5/23/2016 3:24:27 PM  | B34426   |
| Selenium                                   | 0.00071 | 0.00021  | 0.0010  | J    | mg/L  | 1  | 5/23/2016 3:24:27 PM  | B34426   |
| Uranium                                    | 0.00080 | 0.000051 | 0.00050 |      | mg/L  | 1  | 5/23/2016 3:24:27 PM  | B34426   |
| <b>EPA METHOD 7470: MERCURY</b>            |         |          |         |      |       |    | Analyst: <b>pmf</b>   |          |
| Mercury                                    | ND      | 0.000053 | 0.00020 |      | mg/L  | 1  | 5/24/2016 10:21:42 AM | 25454    |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |         |          |         |      |       |    | Analyst: <b>MED</b>   |          |
| Arsenic                                    | ND      | 0.0082   | 0.020   |      | mg/L  | 1  | 5/24/2016 9:13:05 AM  | 25456    |
| Barium                                     | 0.090   | 0.00070  | 0.020   |      | mg/L  | 1  | 5/24/2016 9:13:05 AM  | 25456    |
| Cadmium                                    | ND      | 0.00078  | 0.0020  |      | mg/L  | 1  | 5/24/2016 9:13:05 AM  | 25456    |
| Chromium                                   | ND      | 0.0012   | 0.0060  |      | mg/L  | 1  | 5/24/2016 9:13:05 AM  | 25456    |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605889

Date Reported: 6/30/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Outfall #2

**Project:** San Juan River Bluff 5-18-2016

**Collection Date:** 5/18/2016 11:15:00 AM

**Lab ID:** 1605889-001

**Matrix:** AQUEOUS

**Received Date:** 5/19/2016 7:35:00 AM

| Analyses                                     | Result | MDL     | PQL    | Qual | Units    | DF | Date Analyzed        | Batch ID |
|----------------------------------------------|--------|---------|--------|------|----------|----|----------------------|----------|
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b>   |        |         |        |      |          |    | Analyst: <b>MED</b>  |          |
| Lead                                         | 0.0057 | 0.0041  | 0.0050 |      | mg/L     | 1  | 5/24/2016 9:13:05 AM | 25456    |
| Selenium                                     | ND     | 0.025   | 0.050  |      | mg/L     | 1  | 5/24/2016 9:13:05 AM | 25456    |
| Silver                                       | ND     | 0.00072 | 0.0050 |      | mg/L     | 1  | 5/24/2016 9:13:05 AM | 25456    |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |         |        |      |          |    | Analyst: <b>AG</b>   |          |
| Benzene                                      | ND     | 0.096   | 1.0    |      | µg/L     | 1  | 5/24/2016 4:27:10 PM | B34459   |
| Toluene                                      | ND     | 0.12    | 1.0    |      | µg/L     | 1  | 5/24/2016 4:27:10 PM | B34459   |
| Ethylbenzene                                 | ND     | 0.11    | 1.0    |      | µg/L     | 1  | 5/24/2016 4:27:10 PM | B34459   |
| Methyl tert-butyl ether (MTBE)               | ND     | 0.21    | 1.0    |      | µg/L     | 1  | 5/24/2016 4:27:10 PM | B34459   |
| Xylenes, Total                               | ND     | 0.37    | 1.5    |      | µg/L     | 1  | 5/24/2016 4:27:10 PM | B34459   |
| Surr: 1,2-Dichloroethane-d4                  | 85.8   | 0       | 70-130 |      | %Rec     | 1  | 5/24/2016 4:27:10 PM | B34459   |
| Surr: 4-Bromofluorobenzene                   | 96.9   | 0       | 70-130 |      | %Rec     | 1  | 5/24/2016 4:27:10 PM | B34459   |
| Surr: Dibromofluoromethane                   | 99.8   | 0       | 70-130 |      | %Rec     | 1  | 5/24/2016 4:27:10 PM | B34459   |
| Surr: Toluene-d8                             | 96.2   | 0       | 70-130 |      | %Rec     | 1  | 5/24/2016 4:27:10 PM | B34459   |
| <b>CARBON DIOXIDE</b>                        |        |         |        |      |          |    | Analyst: <b>JRR</b>  |          |
| Total Carbon Dioxide                         | 90     | 0       | 1.0    | H    | mg CO2/L | 1  | 5/23/2016 3:51:21 PM | R34435   |
| <b>SM2320B: ALKALINITY</b>                   |        |         |        |      |          |    | Analyst: <b>JRR</b>  |          |
| Bicarbonate (As CaCO3)                       | 97.96  | 1.485   | 20.00  |      | mg/L CaC | 1  | 5/23/2016 3:51:21 PM | R34435   |
| Carbonate (As CaCO3)                         | ND     | 2.000   | 2.000  |      | mg/L CaC | 1  | 5/23/2016 3:51:21 PM | R34435   |
| Total Alkalinity (as CaCO3)                  | 97.96  | 1.485   | 20.00  |      | mg/L CaC | 1  | 5/23/2016 3:51:21 PM | R34435   |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1605889

Date Reported: 6/30/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Outfall #3

**Project:** San Juan River Bluff 5-18-2016

**Collection Date:** 5/18/2016 11:45:00 AM

**Lab ID:** 1605889-002

**Matrix:** AQUEOUS

**Received Date:** 5/19/2016 7:35:00 AM

| Analyses                                   | Result  | MDL      | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID |
|--------------------------------------------|---------|----------|---------|------|-------|----|-----------------------|----------|
| <b>EPA METHOD 300.0: ANIONS</b>            |         |          |         |      |       |    | Analyst: <b>LGT</b>   |          |
| Fluoride                                   | 0.18    | 0.023    | 0.10    |      | mg/L  | 1  | 5/20/2016 1:32:01 AM  | R34382   |
| Chloride                                   | 3.8     | 0.027    | 0.50    |      | mg/L  | 1  | 5/20/2016 1:32:01 AM  | R34382   |
| Nitrogen, Nitrite (As N)                   | ND      | 0.042    | 0.10    |      | mg/L  | 1  | 5/20/2016 1:32:01 AM  | R34382   |
| Bromide                                    | ND      | 0.032    | 0.10    |      | mg/L  | 1  | 5/20/2016 1:32:01 AM  | R34382   |
| Nitrogen, Nitrate (As N)                   | 0.22    | 0.042    | 0.10    |      | mg/L  | 1  | 5/20/2016 1:32:01 AM  | R34382   |
| Phosphorus, Orthophosphate (As P)          | ND      | 0.22     | 0.50    |      | mg/L  | 1  | 5/20/2016 1:32:01 AM  | R34382   |
| Sulfate                                    | 44      | 1.3      | 10      |      | mg/L  | 20 | 5/20/2016 1:44:25 AM  | R34382   |
| <b>EPA METHOD 200.7: DISSOLVED METALS</b>  |         |          |         |      |       |    | Analyst: <b>ELS</b>   |          |
| Aluminum                                   | ND      | 0.0038   | 0.020   |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Barium                                     | 0.072   | 0.0013   | 0.0020  |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Boron                                      | 0.022   | 0.0011   | 0.040   | J    | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Cadmium                                    | ND      | 0.00075  | 0.0020  |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Calcium                                    | 35      | 0.26     | 1.0     |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Chromium                                   | ND      | 0.0018   | 0.0060  |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Cobalt                                     | 0.0011  | 0.00074  | 0.0060  | J    | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Copper                                     | ND      | 0.0040   | 0.0060  |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Iron                                       | ND      | 0.0091   | 0.020   |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Magnesium                                  | 5.8     | 0.013    | 1.0     |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Manganese                                  | 0.0028  | 0.00032  | 0.0020  |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Molybdenum                                 | ND      | 0.0019   | 0.0080  |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Nickel                                     | ND      | 0.0024   | 0.010   |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Potassium                                  | 1.6     | 0.18     | 1.0     |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Silver                                     | ND      | 0.0028   | 0.0050  |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Sodium                                     | 17      | 0.096    | 1.0     |      | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| Zinc                                       | 0.0084  | 0.0028   | 0.010   | J    | mg/L  | 1  | 5/23/2016 12:31:54 PM | A34409   |
| <b>EPA 200.8: DISSOLVED METALS</b>         |         |          |         |      |       |    | Analyst: <b>DBD</b>   |          |
| Arsenic                                    | 0.00084 | 0.00014  | 0.0010  | J    | mg/L  | 1  | 5/23/2016 3:29:36 PM  | B34426   |
| Lead                                       | ND      | 0.00017  | 0.00050 |      | mg/L  | 1  | 5/23/2016 3:29:36 PM  | B34426   |
| Selenium                                   | 0.00065 | 0.00021  | 0.0010  | J    | mg/L  | 1  | 5/23/2016 3:29:36 PM  | B34426   |
| Uranium                                    | 0.00078 | 0.000051 | 0.00050 |      | mg/L  | 1  | 5/23/2016 3:29:36 PM  | B34426   |
| <b>EPA METHOD 7470: MERCURY</b>            |         |          |         |      |       |    | Analyst: <b>pmf</b>   |          |
| Mercury                                    | ND      | 0.000053 | 0.00020 |      | mg/L  | 1  | 5/24/2016 10:27:48 AM | 25454    |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |         |          |         |      |       |    | Analyst: <b>MED</b>   |          |
| Arsenic                                    | 0.012   | 0.0082   | 0.020   | J    | mg/L  | 1  | 5/24/2016 9:14:15 AM  | 25456    |
| Barium                                     | 0.074   | 0.00070  | 0.020   |      | mg/L  | 1  | 5/24/2016 9:14:15 AM  | 25456    |
| Cadmium                                    | ND      | 0.00078  | 0.0020  |      | mg/L  | 1  | 5/24/2016 9:14:15 AM  | 25456    |
| Chromium                                   | ND      | 0.0012   | 0.0060  |      | mg/L  | 1  | 5/24/2016 9:14:15 AM  | 25456    |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605889

Date Reported: 6/30/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Outfall #3

**Project:** San Juan River Bluff 5-18-2016

**Collection Date:** 5/18/2016 11:45:00 AM

**Lab ID:** 1605889-002

**Matrix:** AQUEOUS

**Received Date:** 5/19/2016 7:35:00 AM

| Analyses                                     | Result | MDL     | PQL    | Qual | Units    | DF | Date Analyzed        | Batch ID |
|----------------------------------------------|--------|---------|--------|------|----------|----|----------------------|----------|
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b>   |        |         |        |      |          |    | Analyst: <b>MED</b>  |          |
| Lead                                         | ND     | 0.0041  | 0.0050 |      | mg/L     | 1  | 5/24/2016 9:14:15 AM | 25456    |
| Selenium                                     | ND     | 0.025   | 0.050  |      | mg/L     | 1  | 5/24/2016 9:14:15 AM | 25456    |
| Silver                                       | ND     | 0.00072 | 0.0050 |      | mg/L     | 1  | 5/24/2016 9:14:15 AM | 25456    |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |         |        |      |          |    | Analyst: <b>AG</b>   |          |
| Benzene                                      | ND     | 0.096   | 1.0    |      | µg/L     | 1  | 5/24/2016 5:53:26 PM | B34459   |
| Toluene                                      | ND     | 0.12    | 1.0    |      | µg/L     | 1  | 5/24/2016 5:53:26 PM | B34459   |
| Ethylbenzene                                 | ND     | 0.11    | 1.0    |      | µg/L     | 1  | 5/24/2016 5:53:26 PM | B34459   |
| Methyl tert-butyl ether (MTBE)               | ND     | 0.21    | 1.0    |      | µg/L     | 1  | 5/24/2016 5:53:26 PM | B34459   |
| Xylenes, Total                               | ND     | 0.37    | 1.5    |      | µg/L     | 1  | 5/24/2016 5:53:26 PM | B34459   |
| Surr: 1,2-Dichloroethane-d4                  | 96.7   | 0       | 70-130 |      | %Rec     | 1  | 5/24/2016 5:53:26 PM | B34459   |
| Surr: 4-Bromofluorobenzene                   | 95.0   | 0       | 70-130 |      | %Rec     | 1  | 5/24/2016 5:53:26 PM | B34459   |
| Surr: Dibromofluoromethane                   | 98.6   | 0       | 70-130 |      | %Rec     | 1  | 5/24/2016 5:53:26 PM | B34459   |
| Surr: Toluene-d8                             | 96.9   | 0       | 70-130 |      | %Rec     | 1  | 5/24/2016 5:53:26 PM | B34459   |
| <b>CARBON DIOXIDE</b>                        |        |         |        |      |          |    | Analyst: <b>JRR</b>  |          |
| Total Carbon Dioxide                         | 87     | 0       | 1.0    | H    | mg CO2/L | 1  | 5/23/2016 4:00:17 PM | R34435   |
| <b>SM2320B: ALKALINITY</b>                   |        |         |        |      |          |    | Analyst: <b>JRR</b>  |          |
| Bicarbonate (As CaCO3)                       | 95.28  | 1.485   | 20.00  |      | mg/L CaC | 1  | 5/23/2016 4:00:17 PM | R34435   |
| Carbonate (As CaCO3)                         | ND     | 2.000   | 2.000  |      | mg/L CaC | 1  | 5/23/2016 4:00:17 PM | R34435   |
| Total Alkalinity (as CaCO3)                  | 95.28  | 1.485   | 20.00  |      | mg/L CaC | 1  | 5/23/2016 4:00:17 PM | R34435   |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605889

30-Jun-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 5-18-2016

|            |             |        |                |                  |      |           |                                           |        |             |      |
|------------|-------------|--------|----------------|------------------|------|-----------|-------------------------------------------|--------|-------------|------|
| Sample ID  | <b>MB-A</b> |        | SampType:      | <b>MBLK</b>      |      | TestCode: | <b>EPA Method 200.7: Dissolved Metals</b> |        |             |      |
| Client ID: | <b>PBW</b>  |        | Batch ID:      | <b>A34409</b>    |      | RunNo:    | <b>34409</b>                              |        |             |      |
| Prep Date: |             |        | Analysis Date: | <b>5/23/2016</b> |      | SeqNo:    | <b>1060909</b>                            | Units: | <b>mg/L</b> |      |
| 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 |                |                  |      |           |                                           |        |             |      |
| Calcium    | ND          | 1.0    |                |                  |      |           |                                           |        |             |      |
| Chromium   | ND          | 0.0060 |                |                  |      |           |                                           |        |             |      |
| Cobalt     | ND          | 0.0060 |                |                  |      |           |                                           |        |             |      |
| Copper     | ND          | 0.0060 |                |                  |      |           |                                           |        |             |      |
| Iron       | ND          | 0.020  |                |                  |      |           |                                           |        |             |      |
| Magnesium  | ND          | 1.0    |                |                  |      |           |                                           |        |             |      |
| Manganese  | ND          | 0.0020 |                |                  |      |           |                                           |        |             |      |
| Molybdenum | ND          | 0.0080 |                |                  |      |           |                                           |        |             |      |
| Nickel     | ND          | 0.010  |                |                  |      |           |                                           |        |             |      |
| Potassium  | ND          | 1.0    |                |                  |      |           |                                           |        |             |      |
| Silver     | ND          | 0.0050 |                |                  |      |           |                                           |        |             |      |
| Sodium     | ND          | 1.0    |                |                  |      |           |                                           |        |             |      |
| Zinc       | ND          | 0.010  |                |                  |      |           |                                           |        |             |      |

|            |              |        |                |                  |      |           |                                           |        |             |      |
|------------|--------------|--------|----------------|------------------|------|-----------|-------------------------------------------|--------|-------------|------|
| Sample ID  | <b>LCS-A</b> |        | SampType:      | <b>LCS</b>       |      | TestCode: | <b>EPA Method 200.7: Dissolved Metals</b> |        |             |      |
| Client ID: | <b>LCSW</b>  |        | Batch ID:      | <b>A34409</b>    |      | RunNo:    | <b>34409</b>                              |        |             |      |
| Prep Date: |              |        | Analysis Date: | <b>5/23/2016</b> |      | SeqNo:    | <b>1060910</b>                            | Units: | <b>mg/L</b> |      |
| Analyte    | Result       | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                 | %RPD   | RPDLimit    | Qual |
| Aluminum   | 0.53         | 0.020  | 0.5000         | 0                | 106  | 85        | 115                                       |        |             |      |
| Barium     | 0.50         | 0.0020 | 0.5000         | 0                | 101  | 85        | 115                                       |        |             |      |
| Boron      | 0.52         | 0.040  | 0.5000         | 0                | 105  | 85        | 115                                       |        |             |      |
| Cadmium    | 0.51         | 0.0020 | 0.5000         | 0                | 101  | 85        | 115                                       |        |             |      |
| Calcium    | 50           | 1.0    | 50.00          | 0                | 99.2 | 85        | 115                                       |        |             |      |
| Chromium   | 0.50         | 0.0060 | 0.5000         | 0                | 99.5 | 85        | 115                                       |        |             |      |
| Cobalt     | 0.48         | 0.0060 | 0.5000         | 0                | 96.2 | 85        | 115                                       |        |             |      |
| Copper     | 0.50         | 0.0060 | 0.5000         | 0                | 100  | 85        | 115                                       |        |             |      |
| Iron       | 0.50         | 0.020  | 0.5000         | 0                | 100  | 85        | 115                                       |        |             |      |
| Magnesium  | 50           | 1.0    | 50.00          | 0                | 100  | 85        | 115                                       |        |             |      |
| Manganese  | 0.49         | 0.0020 | 0.5000         | 0                | 98.4 | 85        | 115                                       |        |             |      |
| Molybdenum | 0.53         | 0.0080 | 0.5000         | 0                | 105  | 85        | 115                                       |        |             |      |
| Nickel     | 0.47         | 0.010  | 0.5000         | 0                | 94.8 | 85        | 115                                       |        |             |      |
| Potassium  | 49           | 1.0    | 50.00          | 0                | 97.7 | 85        | 115                                       |        |             |      |
| Silver     | 0.10         | 0.0050 | 0.1000         | 0                | 101  | 85        | 115                                       |        |             |      |
| Sodium     | 49           | 1.0    | 50.00          | 0                | 98.6 | 85        | 115                                       |        |             |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605889

30-Jun-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 5-18-2016

|            |        |       |                          |             |                                              |          |             |      |          |      |
|------------|--------|-------|--------------------------|-------------|----------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-A  |       | SampType: LCS            |             | TestCode: EPA Method 200.7: Dissolved Metals |          |             |      |          |      |
| Client ID: | LCSW   |       | Batch ID: A34409         |             | RunNo: 34409                                 |          |             |      |          |      |
| Prep Date: |        |       | Analysis Date: 5/23/2016 |             | SeqNo: 1060910                               |          | Units: mg/L |      |          |      |
| Analyte    | Result | PQL   | SPK value                | SPK Ref Val | %REC                                         | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Zinc       | 0.51   | 0.010 | 0.5000                   | 0           | 101                                          | 85       | 115         |      |          |      |

|            |         |        |                          |             |                                              |          |             |      |          |      |
|------------|---------|--------|--------------------------|-------------|----------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LLCS-A  |        | SampType: LCSLL          |             | TestCode: EPA Method 200.7: Dissolved Metals |          |             |      |          |      |
| Client ID: | BatchQC |        | Batch ID: A34409         |             | RunNo: 34409                                 |          |             |      |          |      |
| Prep Date: |         |        | Analysis Date: 5/23/2016 |             | SeqNo: 1060911                               |          | Units: mg/L |      |          |      |
| Analyte    | Result  | PQL    | SPK value                | SPK Ref Val | %REC                                         | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Aluminum   | 0.0097  | 0.020  | 0.01000                  | 0           | 96.7                                         | 50       | 150         |      |          | J    |
| Barium     | 0.0018  | 0.0020 | 0.002000                 | 0           | 89.0                                         | 50       | 150         |      |          | J    |
| Boron      | 0.040   | 0.040  | 0.04000                  | 0           | 100                                          | 50       | 150         |      |          |      |
| Cadmium    | 0.0017  | 0.0020 | 0.002000                 | 0           | 87.0                                         | 50       | 150         |      |          | J    |
| Calcium    | 0.51    | 1.0    | 0.5000                   | 0           | 102                                          | 50       | 150         |      |          | J    |
| Chromium   | 0.0058  | 0.0060 | 0.006000                 | 0           | 96.3                                         | 50       | 150         |      |          | J    |
| Cobalt     | 0.0064  | 0.0060 | 0.006000                 | 0           | 106                                          | 50       | 150         |      |          |      |
| Copper     | 0.0071  | 0.0060 | 0.006000                 | 0           | 119                                          | 50       | 150         |      |          |      |
| Iron       | 0.023   | 0.020  | 0.02000                  | 0           | 116                                          | 50       | 150         |      |          |      |
| Magnesium  | 0.52    | 1.0    | 0.5000                   | 0           | 105                                          | 50       | 150         |      |          | J    |
| Manganese  | 0.0021  | 0.0020 | 0.002000                 | 0           | 103                                          | 50       | 150         |      |          |      |
| Molybdenum | 0.0089  | 0.0080 | 0.008000                 | 0           | 112                                          | 50       | 150         |      |          |      |
| Nickel     | 0.0055  | 0.010  | 0.005000                 | 0           | 110                                          | 50       | 150         |      |          | J    |
| Potassium  | 0.55    | 1.0    | 0.5000                   | 0           | 110                                          | 50       | 150         |      |          | J    |
| Silver     | 0.0049  | 0.0050 | 0.005000                 | 0           | 97.8                                         | 50       | 150         |      |          | J    |
| Sodium     | 0.51    | 1.0    | 0.5000                   | 0           | 102                                          | 50       | 150         |      |          | J    |
| Zinc       | 0.0048  | 0.010  | 0.005000                 | 0           | 95.4                                         | 50       | 150         |      |          | J    |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605889

30-Jun-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 5-18-2016

|            |        |         |                          |             |                                       |          |             |      |          |      |
|------------|--------|---------|--------------------------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS    |         | SampType: LCS            |             | TestCode: EPA 200.8: Dissolved Metals |          |             |      |          |      |
| Client ID: | LCSW   |         | Batch ID: B34426         |             | RunNo: 34426                          |          |             |      |          |      |
| Prep Date: |        |         | Analysis Date: 5/23/2016 |             | SeqNo: 1061592                        |          | Units: mg/L |      |          |      |
| Analyte    | Result | PQL     | SPK value                | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Arsenic    | 0.025  | 0.0010  | 0.02500                  | 0           | 100                                   | 85       | 115         |      |          |      |
| Lead       | 0.013  | 0.00050 | 0.01250                  | 0           | 102                                   | 85       | 115         |      |          |      |
| Selenium   | 0.025  | 0.0010  | 0.02500                  | 0           | 101                                   | 85       | 115         |      |          |      |
| Uranium    | 0.013  | 0.00050 | 0.01250                  | 0           | 107                                   | 85       | 115         |      |          |      |

|            |         |         |           |                |           |          |           |                                       |                     |      |  |
|------------|---------|---------|-----------|----------------|-----------|----------|-----------|---------------------------------------|---------------------|------|--|
| Sample ID  | LCSLL   |         |           | SampType:      | LCSLL     |          |           | TestCode: EPA 200.8: Dissolved Metals |                     |      |  |
| Client ID: | BatchQC |         |           | Batch ID:      | B34426    |          |           | RunNo: 34426                          |                     |      |  |
| Prep Date: |         |         |           | Analysis Date: | 5/23/2016 |          |           | SeqNo:                                | 1061596 Units: mg/L |      |  |
| Analyte    | Result  | PQL     | SPK value | SPK Ref Val    | %REC      | LowLimit | HighLimit | %RPD                                  | RPDLimit            | Qual |  |
| Arsenic    | 0.00096 | 0.0010  | 0.001000  | 0              | 95.6      | 50       | 150       |                                       |                     | J    |  |
| Lead       | 0.00053 | 0.00050 | 0.0005000 | 0              | 105       | 50       | 150       |                                       |                     |      |  |
| Selenium   | 0.00094 | 0.0010  | 0.001000  | 0              | 94.3      | 50       | 150       |                                       |                     | J    |  |
| Uranium    | 0.00054 | 0.00050 | 0.0005000 | 0              | 108       | 50       | 150       |                                       |                     |      |  |

|            |        |                          |           |             |                                       |          |             |      |          |      |
|------------|--------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB     | SampType: MBLK           |           |             | TestCode: EPA 200.8: Dissolved Metals |          |             |      |          |      |
| Client ID: | PBW    | Batch ID: B34426         |           |             | RunNo: 34426                          |          |             |      |          |      |
| Prep Date: |        | Analysis Date: 5/23/2016 |           |             | SeqNo: 1061600                        |          | Units: mg/L |      |          |      |
| Analyte    | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Arsenic    | ND     | 0.0010                   |           |             |                                       |          |             |      |          |      |
| Lead       | ND     | 0.00050                  |           |             |                                       |          |             |      |          |      |
| Selenium   | ND     | 0.0010                   |           |             |                                       |          |             |      |          |      |
| Uranium    | ND     | 0.00050                  |           |             |                                       |          |             |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605889

30-Jun-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 5-18-2016

|                                   |                                 |      |                                           |             |                    |          |           |      |          |      |
|-----------------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>               | SampType: <b>mblk</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b>             | Batch ID: <b>R34382</b>         |      | RunNo: <b>34382</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                        | Analysis Date: <b>5/19/2016</b> |      | SeqNo: <b>1060112</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                           | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                          | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Chloride                          | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |
| Nitrogen, Nitrite (As N)          | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Bromide                           | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Nitrogen, Nitrate (As N)          | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Phosphorus, Orthophosphate (As P) | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |
| Sulfate                           | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |

|                                   |                                 |      |                                           |             |                    |          |           |      |          |      |
|-----------------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>              | SampType: <b>lcs</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b>            | Batch ID: <b>R34382</b>         |      | RunNo: <b>34382</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                        | Analysis Date: <b>5/19/2016</b> |      | SeqNo: <b>1060113</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                           | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                          | 0.51                            | 0.10 | 0.5000                                    | 0           | 102                | 90       | 110       |      |          |      |
| Chloride                          | 4.6                             | 0.50 | 5.000                                     | 0           | 92.9               | 90       | 110       |      |          |      |
| Nitrogen, Nitrite (As N)          | 0.94                            | 0.10 | 1.000                                     | 0           | 94.0               | 90       | 110       |      |          |      |
| Bromide                           | 2.4                             | 0.10 | 2.500                                     | 0           | 95.7               | 90       | 110       |      |          |      |
| Nitrogen, Nitrate (As N)          | 2.4                             | 0.10 | 2.500                                     | 0           | 98.0               | 90       | 110       |      |          |      |
| Phosphorus, Orthophosphate (As P) | 4.8                             | 0.50 | 5.000                                     | 0           | 95.9               | 90       | 110       |      |          |      |
| Sulfate                           | 9.6                             | 0.50 | 10.00                                     | 0           | 96.1               | 90       | 110       |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605889

30-Jun-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 5-18-2016

|                             |            |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100NG LCS3 |     | SampType: LCS            |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | LCSW       |     | Batch ID: B34459         |             | RunNo: 34459                                    |          |             |      |          |      |
| Prep Date:                  |            |     | Analysis Date: 5/25/2016 |             | SeqNo: 1062783                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result     | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 22         | 1.0 | 20.00                    | 0           | 108                                             | 70       | 130         |      |          |      |
| Toluene                     | 19         | 1.0 | 20.00                    | 0           | 95.7                                            | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.6        |     | 10.00                    |             | 96.1                                            | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.5        |     | 10.00                    |             | 95.2                                            | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 10         |     | 10.00                    |             | 100                                             | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.9        |     | 10.00                    |             | 98.7                                            | 70       | 130         |      |          |      |

|                                |        |                          |           |             |                                                 |          |             |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | rb3    | SampType: MBLK           |           |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: B34459         |           |             | RunNo: 34459                                    |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 5/25/2016 |           |             | SeqNo: 1062784                                  |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Xylenes, Total                 | ND     | 1.5                      |           |             |                                                 |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.4    |                          | 10.00     |             | 93.9                                            | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene     | 9.6    |                          | 10.00     |             | 96.1                                            | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane     | 9.5    |                          | 10.00     |             | 94.8                                            | 70       | 130         |      |          |      |
| Surr: Toluene-d8               | 9.8    |                          | 10.00     |             | 97.9                                            | 70       | 130         |      |          |      |

|                             |                |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|----------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1605889-001ams |     | SampType: MS             |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | Outfall #2     |     | Batch ID: B34459         |             | RunNo: 34459                                    |          |             |      |          |      |
| Prep Date:                  |                |     | Analysis Date: 5/24/2016 |             | SeqNo: 1062921                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result         | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 22             | 1.0 | 20.00                    | 0           | 109                                             | 70       | 130         |      |          |      |
| Toluene                     | 20             | 1.0 | 20.00                    | 0           | 101                                             | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 8.7            |     | 10.00                    |             | 86.5                                            | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.7            |     | 10.00                    |             | 96.8                                            | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.4            |     | 10.00                    |             | 94.3                                            | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.7            |     | 10.00                    |             | 97.3                                            | 70       | 130         |      |          |      |

|            |                 |     |                |             |      |           |                                       |        |          |      |  |
|------------|-----------------|-----|----------------|-------------|------|-----------|---------------------------------------|--------|----------|------|--|
| Sample ID  | 1605889-001amsd |     | SampType:      | MSD         |      | TestCode: | EPA Method 8260: Volatiles Short List |        |          |      |  |
| Client ID: | Outfall #2      |     | Batch ID:      | B34459      |      | RunNo:    | 34459                                 |        |          |      |  |
| Prep Date: |                 |     | Analysis Date: | 5/24/2016   |      | SeqNo:    | 1062922                               | Units: | µg/L     |      |  |
| Analyte    | Result          | PQL | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                             | %RPD   | RPDLimit | Qual |  |
| Benzene    | 20              | 1.0 | 20.00          | 0           | 99.7 | 70        | 130                                   | 8.74   | 20       |      |  |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605889

30-Jun-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 5-18-2016

|                             |                 |                |           |             |                                       |          |           |      |          |      |  |
|-----------------------------|-----------------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|--|
| Sample ID                   | 1605889-001amsd | SampType:      | MSD       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |  |
| Client ID:                  | Outfall #2      | Batch ID:      | B34459    | RunNo:      | 34459                                 |          |           |      |          |      |  |
| Prep Date:                  |                 | Analysis Date: | 5/24/2016 | SeqNo:      | 1062922                               | Units:   | µg/L      |      |          |      |  |
| Analyte                     | Result          | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |  |
| Toluene                     | 19              | 1.0            | 20.00     | 0           | 95.1                                  | 70       | 130       | 5.67 | 20       |      |  |
| Surr: 1,2-Dichloroethane-d4 | 9.0             |                | 10.00     |             | 89.5                                  | 70       | 130       | 0    | 0        |      |  |
| Surr: 4-Bromofluorobenzene  | 9.7             |                | 10.00     |             | 96.8                                  | 70       | 130       | 0    | 0        |      |  |
| Surr: Dibromofluoromethane  | 9.2             |                | 10.00     |             | 91.5                                  | 70       | 130       | 0    | 0        |      |  |
| Surr: Toluene-d8            | 10              |                | 10.00     |             | 103                                   | 70       | 130       | 0    | 0        |      |  |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

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E Value above quantitation range  
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P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605889

30-Jun-16

**Client:** Western Refining Southwest, Inc.

**Project:** San Juan River Bluff 5-18-2016

|            |                  |                |                  |             |                                 |          |             |      |          |      |
|------------|------------------|----------------|------------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID  | <b>MB-25454</b>  | SampType:      | <b>MBLK</b>      | TestCode:   | <b>EPA Method 7470: Mercury</b> |          |             |      |          |      |
| Client ID: | <b>PBW</b>       | Batch ID:      | <b>25454</b>     | RunNo:      | <b>34451</b>                    |          |             |      |          |      |
| Prep Date: | <b>5/23/2016</b> | Analysis Date: | <b>5/24/2016</b> | SeqNo:      | <b>1062352</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte    | Result           | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | ND               | 0.00020        |                  |             |                                 |          |             |      |          |      |

|            |                  |                |                  |             |                                 |          |             |      |          |      |
|------------|------------------|----------------|------------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID  | <b>LCS-25454</b> | SampType:      | <b>LCS</b>       | TestCode:   | <b>EPA Method 7470: Mercury</b> |          |             |      |          |      |
| Client ID: | <b>LCSW</b>      | Batch ID:      | <b>25454</b>     | RunNo:      | <b>34451</b>                    |          |             |      |          |      |
| Prep Date: | <b>5/23/2016</b> | Analysis Date: | <b>5/24/2016</b> | SeqNo:      | <b>1062353</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte    | Result           | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0051           | 0.00020        | 0.005000         | 0           | 101                             | 80       | 120         |      |          |      |

|            |                       |                |                  |             |                                 |          |             |      |          |      |
|------------|-----------------------|----------------|------------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID  | <b>1605889-001CMS</b> | SampType:      | <b>MS</b>        | TestCode:   | <b>EPA Method 7470: Mercury</b> |          |             |      |          |      |
| Client ID: | <b>Outfall #2</b>     | Batch ID:      | <b>25454</b>     | RunNo:      | <b>34451</b>                    |          |             |      |          |      |
| Prep Date: | <b>5/23/2016</b>      | Analysis Date: | <b>5/24/2016</b> | SeqNo:      | <b>1062355</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte    | Result                | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0050                | 0.00020        | 0.005000         | 0           | 101                             | 75       | 125         |      |          |      |

|            |                        |                |                  |             |                                 |          |             |       |          |      |
|------------|------------------------|----------------|------------------|-------------|---------------------------------|----------|-------------|-------|----------|------|
| Sample ID  | <b>1605889-001CMSD</b> | SampType:      | <b>MSD</b>       | TestCode:   | <b>EPA Method 7470: Mercury</b> |          |             |       |          |      |
| Client ID: | <b>Outfall #2</b>      | Batch ID:      | <b>25454</b>     | RunNo:      | <b>34451</b>                    |          |             |       |          |      |
| Prep Date: | <b>5/23/2016</b>       | Analysis Date: | <b>5/24/2016</b> | SeqNo:      | <b>1062357</b>                  | Units:   | <b>mg/L</b> |       |          |      |
| Analyte    | Result                 | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD  | RPDLimit | Qual |
| Mercury    | 0.0050                 | 0.00020        | 0.005000         | 0           | 100                             | 75       | 125         | 0.421 | 20       |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605889

30-Jun-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 5-18-2016

|            |                  |        |                |                  |      |           |                                            |        |             |      |
|------------|------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>MB-25456</b>  |        | SampType:      | <b>MBLK</b>      |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>PBW</b>       |        | Batch ID:      | <b>25456</b>     |      | RunNo:    | <b>34428</b>                               |        |             |      |
| Prep Date: | <b>5/23/2016</b> |        | Analysis Date: | <b>5/24/2016</b> |      | SeqNo:    | <b>1061590</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | 0.012            | 0.020  |                |                  |      |           |                                            |        |             | J    |
| Barium     | ND               | 0.020  |                |                  |      |           |                                            |        |             |      |
| Cadmium    | ND               | 0.0020 |                |                  |      |           |                                            |        |             |      |
| Chromium   | ND               | 0.0060 |                |                  |      |           |                                            |        |             |      |
| Lead       | ND               | 0.0050 |                |                  |      |           |                                            |        |             |      |
| Selenium   | ND               | 0.050  |                |                  |      |           |                                            |        |             |      |
| Silver     | ND               | 0.0050 |                |                  |      |           |                                            |        |             |      |

|            |                  |        |                |                  |      |           |                                            |        |             |      |
|------------|------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>LCS-25456</b> |        | SampType:      | <b>LCS</b>       |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>LCSW</b>      |        | Batch ID:      | <b>25456</b>     |      | RunNo:    | <b>34428</b>                               |        |             |      |
| Prep Date: | <b>5/23/2016</b> |        | Analysis Date: | <b>5/24/2016</b> |      | SeqNo:    | <b>1061591</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | 0.51             | 0.020  | 0.5000         | 0                | 102  | 80        | 120                                        |        |             |      |
| Barium     | 0.49             | 0.020  | 0.5000         | 0                | 98.7 | 80        | 120                                        |        |             |      |
| Cadmium    | 0.50             | 0.0020 | 0.5000         | 0                | 99.8 | 80        | 120                                        |        |             |      |
| Chromium   | 0.50             | 0.0060 | 0.5000         | 0                | 99.2 | 80        | 120                                        |        |             |      |
| Lead       | 0.49             | 0.0050 | 0.5000         | 0                | 97.6 | 80        | 120                                        |        |             |      |
| Selenium   | 0.52             | 0.050  | 0.5000         | 0                | 104  | 80        | 120                                        |        |             |      |
| Silver     | 0.099            | 0.0050 | 0.1000         | 0                | 98.6 | 80        | 120                                        |        |             |      |

|            |                       |        |                |                  |      |           |                                            |        |             |      |
|------------|-----------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>1605889-002CMS</b> |        | SampType:      | <b>MS</b>        |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>Outfall #3</b>     |        | Batch ID:      | <b>25456</b>     |      | RunNo:    | <b>34428</b>                               |        |             |      |
| Prep Date: | <b>5/23/2016</b>      |        | Analysis Date: | <b>5/24/2016</b> |      | SeqNo:    | <b>1061598</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result                | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | 0.50                  | 0.020  | 0.5000         | 0.01189          | 97.6 | 75        | 125                                        |        |             |      |
| Barium     | 0.55                  | 0.020  | 0.5000         | 0.07426          | 95.7 | 75        | 125                                        |        |             |      |
| Cadmium    | 0.48                  | 0.0020 | 0.5000         | 0                | 96.6 | 75        | 125                                        |        |             |      |
| Chromium   | 0.48                  | 0.0060 | 0.5000         | 0                | 95.9 | 75        | 125                                        |        |             |      |
| Lead       | 0.48                  | 0.0050 | 0.5000         | 0                | 95.3 | 75        | 125                                        |        |             |      |
| Selenium   | 0.48                  | 0.050  | 0.5000         | 0                | 96.2 | 75        | 125                                        |        |             |      |
| Silver     | 0.096                 | 0.0050 | 0.1000         | 0                | 96.3 | 75        | 125                                        |        |             |      |

|            |                        |       |                |                  |      |           |                                            |        |             |      |
|------------|------------------------|-------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>1605889-002CMSD</b> |       | SampType:      | <b>MSD</b>       |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>Outfall #3</b>      |       | Batch ID:      | <b>25456</b>     |      | RunNo:    | <b>34428</b>                               |        |             |      |
| Prep Date: | <b>5/23/2016</b>       |       | Analysis Date: | <b>5/24/2016</b> |      | SeqNo:    | <b>1061626</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result                 | PQL   | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | 0.49                   | 0.020 | 0.5000         | 0.01189          | 95.4 | 75        | 125                                        | 2.24   | 20          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605889

30-Jun-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 5-18-2016

|            |                 |                |           |             |                                     |          |           |       |          |      |
|------------|-----------------|----------------|-----------|-------------|-------------------------------------|----------|-----------|-------|----------|------|
| Sample ID  | 1605889-002CMSD | SampType:      | MSD       | TestCode:   | EPA 6010B: Total Recoverable Metals |          |           |       |          |      |
| Client ID: | Outfall #3      | Batch ID:      | 25456     | RunNo:      | 34428                               |          |           |       |          |      |
| Prep Date: | 5/23/2016       | Analysis Date: | 5/24/2016 | SeqNo:      | 1061626                             | Units:   | mg/L      |       |          |      |
| Analyte    | Result          | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD  | RPDLimit | Qual |
| Barium     | 0.55            | 0.020          | 0.5000    | 0.07426     | 95.0                                | 75       | 125       | 0.659 | 20       |      |
| Cadmium    | 0.48            | 0.0020         | 0.5000    | 0           | 96.2                                | 75       | 125       | 0.440 | 20       |      |
| Chromium   | 0.48            | 0.0060         | 0.5000    | 0           | 96.2                                | 75       | 125       | 0.237 | 20       |      |
| Lead       | 0.48            | 0.0050         | 0.5000    | 0           | 95.0                                | 75       | 125       | 0.313 | 20       |      |
| Selenium   | 0.47            | 0.050          | 0.5000    | 0           | 94.1                                | 75       | 125       | 2.24  | 20       |      |
| Silver     | 0.097           | 0.0050         | 0.1000    | 0           | 97.0                                | 75       | 125       | 0.786 | 20       |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605889

30-Jun-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 5-18-2016

|                             |        |       |                          |             |                               |          |                   |      |          |      |
|-----------------------------|--------|-------|--------------------------|-------------|-------------------------------|----------|-------------------|------|----------|------|
| Sample ID                   | mb-1   |       | SampType: mblk           |             | TestCode: SM2320B: Alkalinity |          |                   |      |          |      |
| Client ID:                  | PBW    |       | Batch ID: R34435         |             | RunNo: 34435                  |          |                   |      |          |      |
| Prep Date:                  |        |       | Analysis Date: 5/23/2016 |             | SeqNo: 1061823                |          | Units: mg/L CaCO3 |      |          |      |
| Analyte                     | Result | PQL   | SPK value                | SPK Ref Val | %REC                          | LowLimit | HighLimit         | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 2.040  | 20.00 |                          |             |                               |          |                   |      |          | J    |

|                             |        |       |                          |             |                               |          |                   |      |          |      |
|-----------------------------|--------|-------|--------------------------|-------------|-------------------------------|----------|-------------------|------|----------|------|
| Sample ID                   | Ics-1  |       | SampType: Ics            |             | TestCode: SM2320B: Alkalinity |          |                   |      |          |      |
| Client ID:                  | LCSW   |       | Batch ID: R34435         |             | RunNo: 34435                  |          |                   |      |          |      |
| Prep Date:                  |        |       | Analysis Date: 5/23/2016 |             | SeqNo: 1061824                |          | Units: mg/L CaCO3 |      |          |      |
| Analyte                     | Result | PQL   | SPK value                | SPK Ref Val | %REC                          | LowLimit | HighLimit         | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 77.52  | 20.00 | 80.00                    | 0           | 96.9                          | 90       | 110               |      |          |      |

|                             |        |       |                |             |      |           |                     |        |            |      |  |
|-----------------------------|--------|-------|----------------|-------------|------|-----------|---------------------|--------|------------|------|--|
| Sample ID                   | mb-2   |       | SampType:      | mblk        |      | TestCode: | SM2320B: Alkalinity |        |            |      |  |
| Client ID:                  | PBW    |       | Batch ID:      | R34435      |      | RunNo:    | 34435               |        |            |      |  |
| Prep Date:                  |        |       | Analysis Date: | 5/23/2016   |      | SeqNo:    | 1061847             | Units: | mg/L CaCO3 |      |  |
| Analyte                     | Result | PQL   | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit           | %RPD   | RPDLimit   | Qual |  |
| Total Alkalinity (as CaCO3) | ND     | 20.00 |                |             |      |           |                     |        |            |      |  |

|                             |        |       |                          |             |                               |          |                   |      |          |      |
|-----------------------------|--------|-------|--------------------------|-------------|-------------------------------|----------|-------------------|------|----------|------|
| Sample ID                   | Ics-2  |       | SampType: Ics            |             | TestCode: SM2320B: Alkalinity |          |                   |      |          |      |
| Client ID:                  | LCSW   |       | Batch ID: R34435         |             | RunNo: 34435                  |          |                   |      |          |      |
| Prep Date:                  |        |       | Analysis Date: 5/23/2016 |             | SeqNo: 1061848                |          | Units: mg/L CaCO3 |      |          |      |
| Analyte                     | Result | PQL   | SPK value                | SPK Ref Val | %REC                          | LowLimit | HighLimit         | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 77.92  | 20.00 | 80.00                    | 0           | 97.4                          | 90       | 110               |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



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

## Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1605889

RcptNo: 1

Received by/date:

LM

05/19/16

Logged By: Lindsay Mangin

5/19/2016 7:35:00 AM

*Judy Hedges*

Completed By: Lindsay Mangin

5/19/2016 9:11:40 AM

*Judy Hedges*

Reviewed By:

*LM*

05/19/16

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

6

( $<2$  or  $>12$  unless noted)

Adjusted?

NO

Checked by:

*aj*

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 2.6                     | Good      | Yes         |         |           |           |



# Chain-of-Custody Record

Client: Western Refining

Mailing Address: 50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☐ Standard

☐ Other

☒ EDD (Type)

☒ Level 4 (Full Validation)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: San Juan River Bluff

5 - 18 - 2016

Project #: Semi Annual

PO# 12615521

Project Manager:

Kelly Robinson

Sampler: M. Wicker

On Ice: ☒ Yes ☐ No

Sample Temperature: 7.6

Date Time Matrix Sample Request ID

5-18-16 1145 H<sub>2</sub>O Outfall #3

H<sub>2</sub>O Outfall #3

H<sub>2</sub>O Outfall #3

H<sub>2</sub>O Outfall #3

H<sub>2</sub>O Outfall #3

Container Type and #

3-VOA

1-500 ml

1-250 ml

1-250 ml

1-500 ml

Preservative Type

HCl

HNO<sub>3</sub>

HNO<sub>3</sub>

H<sub>2</sub>SO<sub>4</sub>

Cool

HEAL No.

1605889

-002

-002

-002

-002

-003

## Analysis Request

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH 80158 (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH (8310 or 8270SIMS)

RCRA 8 Metals

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / 8082 PCB's

8260B (VOA) BTEX, MTBE only

8270 (Semi-VOA)

Alk., CO<sub>2</sub>

Dissolved Metals

Air Bubbles (Y or N)

Remarks:

Received by: [Signature] Date Time 5/18/16 1000

Received by: [Signature] Date Time 05/19/16 0735

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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

August 31, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: Collection Wells 8-17-2016

OrderNo.: 1608B58

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/19/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B58

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** CW 25+95

**Project:** Collection Wells 8-17-2016

**Collection Date:** 8/17/2016 2:50:00 PM

**Lab ID:** 1608B58-001

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>   |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 8/22/2016 5:58:42 PM  |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 5:58:42 PM  |
| Surr: DNOP                                   | 114    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 5:58:42 PM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | 7.1    | 5.0      | D    | µg/L  | 5  | 8/22/2016 12:03:13 PM |
| Toluene                                      | ND     | 5.0      | D    | µg/L  | 5  | 8/22/2016 12:03:13 PM |
| Ethylbenzene                                 | ND     | 5.0      | D    | µg/L  | 5  | 8/22/2016 12:03:13 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 5.0      | D    | µg/L  | 5  | 8/22/2016 12:03:13 PM |
| Xylenes, Total                               | ND     | 7.5      | D    | µg/L  | 5  | 8/22/2016 12:03:13 PM |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   | D    | %Rec  | 5  | 8/22/2016 12:03:13 PM |
| Surr: 4-Bromofluorobenzene                   | 96.1   | 70-130   | D    | %Rec  | 5  | 8/22/2016 12:03:13 PM |
| Surr: Dibromofluoromethane                   | 93.5   | 70-130   | D    | %Rec  | 5  | 8/22/2016 12:03:13 PM |
| Surr: Toluene-d8                             | 99.2   | 70-130   | D    | %Rec  | 5  | 8/22/2016 12:03:13 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B58

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** CW 0+60

**Project:** Collection Wells 8-17-2016

**Collection Date:** 8/17/2016 3:30:00 PM

**Lab ID:** 1608B58-002

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>   |
| Diesel Range Organics (DRO)                  | 0.83   | 0.20     |      | mg/L  | 1  | 8/22/2016 6:20:29 PM  |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 6:20:29 PM  |
| Surr: DNOP                                   | 115    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 6:20:29 PM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>    |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/22/2016 12:32:03 PM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/22/2016 12:32:03 PM |
| Ethylbenzene                                 | 1.8    | 1.0      |      | µg/L  | 1  | 8/22/2016 12:32:03 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 8/22/2016 12:32:03 PM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 8/22/2016 12:32:03 PM |
| Surr: 1,2-Dichloroethane-d4                  | 90.0   | 70-130   |      | %Rec  | 1  | 8/22/2016 12:32:03 PM |
| Surr: 4-Bromofluorobenzene                   | 87.2   | 70-130   |      | %Rec  | 1  | 8/22/2016 12:32:03 PM |
| Surr: Dibromofluoromethane                   | 83.2   | 70-130   |      | %Rec  | 1  | 8/22/2016 12:32:03 PM |
| Surr: Toluene-d8                             | 98.0   | 70-130   |      | %Rec  | 1  | 8/22/2016 12:32:03 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B58

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** CW 0+60 Dup

**Project:** Collection Wells 8-17-2016

**Collection Date:** 8/17/2016 3:40:00 PM

**Lab ID:** 1608B58-003

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>  |
| Diesel Range Organics (DRO)                  | 0.90   | 0.20     |      | mg/L  | 1  | 8/22/2016 6:41:59 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 6:41:59 PM |
| Surr: DNOP                                   | 117    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 6:41:59 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/22/2016 1:00:49 PM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/22/2016 1:00:49 PM |
| Ethylbenzene                                 | 1.7    | 1.0      |      | µg/L  | 1  | 8/22/2016 1:00:49 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 8/22/2016 1:00:49 PM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 8/22/2016 1:00:49 PM |
| Surr: 1,2-Dichloroethane-d4                  | 92.0   | 70-130   |      | %Rec  | 1  | 8/22/2016 1:00:49 PM |
| Surr: 4-Bromofluorobenzene                   | 91.3   | 70-130   |      | %Rec  | 1  | 8/22/2016 1:00:49 PM |
| Surr: Dibromofluoromethane                   | 85.0   | 70-130   |      | %Rec  | 1  | 8/22/2016 1:00:49 PM |
| Surr: Toluene-d8                             | 98.4   | 70-130   |      | %Rec  | 1  | 8/22/2016 1:00:49 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B58

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** TRIP BLANK

**Project:** Collection Wells 8-17-2016

**Collection Date:**

**Lab ID:** 1608B58-004

**Matrix:** TRIP BLANK

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/22/2016 1:29:35 PM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/22/2016 1:29:35 PM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/22/2016 1:29:35 PM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/22/2016 1:29:35 PM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/22/2016 1:29:35 PM |
| Surr: 1,2-Dichloroethane-d4                  | 98.5   | 70-130 |      | %Rec  | 1  | 8/22/2016 1:29:35 PM |
| Surr: 4-Bromofluorobenzene                   | 95.6   | 70-130 |      | %Rec  | 1  | 8/22/2016 1:29:35 PM |
| Surr: Dibromofluoromethane                   | 95.3   | 70-130 |      | %Rec  | 1  | 8/22/2016 1:29:35 PM |
| Surr: Toluene-d8                             | 96.7   | 70-130 |      | %Rec  | 1  | 8/22/2016 1:29:35 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608B58

31-Aug-16

Client: Western Refining Southwest, Inc.

Project: Collection Wells 8-17-2016

|                             |                  |      |                                 |             |                                                 |          |                    |      |          |      |
|-----------------------------|------------------|------|---------------------------------|-------------|-------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID                   | <b>LCS-27092</b> |      | SampType: <b>LCS</b>            |             | TestCode: <b>EPA Method 8015D: Diesel Range</b> |          |                    |      |          |      |
| Client ID:                  | <b>LCSW</b>      |      | Batch ID: <b>27092</b>          |             | RunNo: <b>36661</b>                             |          |                    |      |          |      |
| Prep Date:                  | <b>8/22/2016</b> |      | Analysis Date: <b>8/22/2016</b> |             | SeqNo: <b>1135687</b>                           |          | Units: <b>mg/L</b> |      |          |      |
| Analyte                     | Result           | PQL  | SPK value                       | SPK Ref Val | %REC                                            | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 2.9              | 0.20 | 2.500                           | 0           | 118                                             | 65.4     | 162                |      |          |      |
| Surr: DNOP                  | 0.27             |      | 0.2500                          |             | 107                                             | 67.9     | 149                |      |          |      |

|                                |                  |      |                                 |             |                                                 |          |                    |      |          |      |
|--------------------------------|------------------|------|---------------------------------|-------------|-------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID                      | <b>MB-27092</b>  |      | SampType: <b>MBLK</b>           |             | TestCode: <b>EPA Method 8015D: Diesel Range</b> |          |                    |      |          |      |
| Client ID:                     | <b>PBW</b>       |      | Batch ID: <b>27092</b>          |             | RunNo: <b>36661</b>                             |          |                    |      |          |      |
| Prep Date:                     | <b>8/22/2016</b> |      | Analysis Date: <b>8/22/2016</b> |             | SeqNo: <b>1135688</b>                           |          | Units: <b>mg/L</b> |      |          |      |
| Analyte                        | Result           | PQL  | SPK value                       | SPK Ref Val | %REC                                            | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND               | 0.20 |                                 |             |                                                 |          |                    |      |          |      |
| Motor Oil Range Organics (MRO) | ND               | 2.5  |                                 |             |                                                 |          |                    |      |          |      |
| Surr: DNOP                     | 0.55             |      | 0.5000                          |             | 109                                             | 67.9     | 149                |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608B58

31-Aug-16

**Client:** Western Refining Southwest, Inc.

**Project:** Collection Wells 8-17-2016

| Sample ID <b>100ng lcs2</b> | SampType: <b>LCS</b>            |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
|-----------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>LCSW</b>      | Batch ID: <b>S36669</b>         |     | RunNo: <b>36669</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>8/22/2016</b> |     | SeqNo: <b>1136015</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 19                              | 1.0 | 20.00                                                  | 0           | 96.3               | 70       | 130       |      |          |      |
| Toluene                     | 20                              | 1.0 | 20.00                                                  | 0           | 99.2               | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.8                             |     | 10.00                                                  |             | 98.2               | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.6                             |     | 10.00                                                  |             | 95.5               | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.2                             |     | 10.00                                                  |             | 91.9               | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 9.8                             |     | 10.00                                                  |             | 98.3               | 70       | 130       |      |          |      |

| Sample ID <b>rb</b>            | SampType: <b>MBLK</b>           |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
|--------------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>PBW</b>          | Batch ID: <b>S36669</b>         |     | RunNo: <b>36669</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                     | Analysis Date: <b>8/22/2016</b> |     | SeqNo: <b>1136016</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                        | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Toluene                        | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Ethylbenzene                   | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND                              | 1.0 |                                                        |             |                    |          |           |      |          |      |
| Xylenes, Total                 | ND                              | 1.5 |                                                        |             |                    |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.9                             |     | 10.00                                                  |             | 98.9               | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene     | 9.2                             |     | 10.00                                                  |             | 92.1               | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane     | 9.5                             |     | 10.00                                                  |             | 94.8               | 70       | 130       |      |          |      |
| Surr: Toluene-d8               | 9.7                             |     | 10.00                                                  |             | 96.8               | 70       | 130       |      |          |      |

| Sample ID <b>1608b58-001ams</b> | SampType: <b>MS</b>             |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
|---------------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>CW 25+95</b>      | Batch ID: <b>S36669</b>         |     | RunNo: <b>36669</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                      | Analysis Date: <b>8/22/2016</b> |     | SeqNo: <b>1136018</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                         | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                         | 99                              | 5.0 | 100.0                                                  | 7.051       | 92.0               | 70       | 130       |      |          |      |
| Toluene                         | 98                              | 5.0 | 100.0                                                  | 0           | 97.9               | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4     | 51                              |     | 50.00                                                  |             | 103                | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene      | 48                              |     | 50.00                                                  |             | 96.8               | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane      | 46                              |     | 50.00                                                  |             | 92.3               | 70       | 130       |      |          |      |
| Surr: Toluene-d8                | 49                              |     | 50.00                                                  |             | 98.0               | 70       | 130       |      |          |      |

| Sample ID <b>1608b58-001amsd</b> | SampType: <b>MSD</b>            |     | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |             |                    |          |           |      |          |      |
|----------------------------------|---------------------------------|-----|--------------------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>CW 25+95</b>       | Batch ID: <b>S36669</b>         |     | RunNo: <b>36669</b>                                    |             |                    |          |           |      |          |      |
| Prep Date:                       | Analysis Date: <b>8/22/2016</b> |     | SeqNo: <b>1136019</b>                                  |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                          | Result                          | PQL | SPK value                                              | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                          | 94                              | 5.0 | 100.0                                                  | 7.051       | 86.7               | 70       | 130       | 5.48 | 20       |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608B58

31-Aug-16

Client: Western Refining Southwest, Inc.

Project: Collection Wells 8-17-2016

|                             |                 |                |           |             |                                       |          |           |      |          |      |  |
|-----------------------------|-----------------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|--|
| Sample ID                   | 1608b58-001amsd | SampType:      | MSD       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |  |
| Client ID:                  | CW 25+95        | Batch ID:      | S36669    | RunNo:      | 36669                                 |          |           |      |          |      |  |
| Prep Date:                  |                 | Analysis Date: | 8/22/2016 | SeqNo:      | 1136019                               | Units:   | µg/L      |      |          |      |  |
| Analyte                     | Result          | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |  |
| Toluene                     | 93              | 5.0            | 100.0     | 0           | 93.4                                  | 70       | 130       | 4.71 | 20       |      |  |
| Surr: 1,2-Dichloroethane-d4 | 48              |                | 50.00     |             | 96.4                                  | 70       | 130       | 0    | 0        |      |  |
| Surr: 4-Bromofluorobenzene  | 45              |                | 50.00     |             | 89.8                                  | 70       | 130       | 0    | 0        |      |  |
| Surr: Dibromofluoromethane  | 45              |                | 50.00     |             | 90.2                                  | 70       | 130       | 0    | 0        |      |  |
| Surr: Toluene-d8            | 49              |                | 50.00     |             | 97.1                                  | 70       | 130       | 0    | 0        |      |  |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1608B58

RcptNo: 1

Received by/date:

Logged By:

Ashley Gallegos

8/19/2016 7:30:00 AM

Completed By:

Ashley Gallegos

8/19/2016 10:28:29 AM

Reviewed By:

## Chain of Custody

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 samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of >0° C to 6.0°C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

## 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 2.1     | Good      | Yes         |         |           |           |







**Analytical Methods and Target Analytes**  
**Facility-Wide Groundwater Monitoring Plan - June 2012**  
**Western Refining - Bloomfield Refinery**

|                                                                      |
|----------------------------------------------------------------------|
| <b>VOCs (EPA Method 8260B) <sup>(1)</sup></b>                        |
| Target List                                                          |
| <i>Benzene</i>                                                       |
| <i>Toluene</i>                                                       |
| <i>Ethylbenzene</i>                                                  |
| <i>Xylenes</i>                                                       |
| <i>Methyl tert butyl ether (MTBE)</i>                                |
| <b>SVOCs - (EPA Method 8270)</b>                                     |
| Method List                                                          |
| <b>TPH-GRO (EPA Method 8015B)</b>                                    |
| Gasoline Range Organics                                              |
| <b>TPH-DRO (EPA Method 8015B)</b>                                    |
| Diesel Range Organics                                                |
| Motor Oil Range Organics                                             |
| <b>Total Carbon Dioxide (Laboratory Calculated)</b>                  |
| Dissolved CO <sub>2</sub>                                            |
| <b>Specific Conductivity (EPA Method 120.1 or Field Measurement)</b> |
| Specific Conductance                                                 |
| <b>TDS (EPA Method 160.1 or Field Measurement)</b>                   |
| Total Dissolved Solids                                               |
| <b>General Chemistry - Anions (EPA method 300.0)</b>                 |
| <i>Fluoride</i>                                                      |
| <i>Chloride</i>                                                      |
| <i>Bromide</i>                                                       |
| <i>Nitrogen, Nitrite (as N)</i>                                      |
| <i>Nitrogen, Nitrate (as N)</i>                                      |
| <i>Phosphorous, Orthophosphate (As P)</i>                            |
| <i>Sulfate</i>                                                       |
| <b>General Chemistry - Alkalinity (EPA Method 310.1)</b>             |
| <i>Alkalinity, Total</i>                                             |
| <i>Carbonate</i>                                                     |
| <i>Bicarbonate</i>                                                   |

|                                                         |
|---------------------------------------------------------|
| <b>Total Recoverable Metals (EPA Method 6010B/7470)</b> |
| Target List                                             |
| <i>Arsenic</i>                                          |
| <i>Barium</i>                                           |
| <i>Cadmium</i>                                          |
| <i>Chromium</i>                                         |
| <i>Lead</i>                                             |
| <i>Mercury</i>                                          |
| <i>Selenium</i>                                         |
| <i>Silver</i>                                           |
| Target List (for River Terrace Sampling Events Only)    |
| <i>Lead</i>                                             |
| <i>Mercury (DW-1 ONLY)</i>                              |
| <b>Dissolved Metals (EPA Method 6010B / 7470)</b>       |
| Target List (for Refinery Complex, Outfalls and River)  |
| <i>Arsenic</i>                                          |
| <i>Barium</i>                                           |
| <i>Cadmium</i>                                          |
| <i>Calcium</i>                                          |
| <i>Chromium</i>                                         |
| <i>Copper</i>                                           |
| <i>Iron</i>                                             |
| <i>Lead</i>                                             |
| <i>Magnesium</i>                                        |
| <i>Manganese</i>                                        |
| <i>Mercury</i>                                          |
| <i>Potassium</i>                                        |
| <i>Selenium</i>                                         |
| <i>Silver</i>                                           |
| <i>Sodium</i>                                           |
| <i>Uranium</i>                                          |
| <i>Zinc</i>                                             |

TPH = total petroleum hydrocarbons  
GRO = gasoline range organics  
VOCs = volatile organic compounds  
DRO = diesel range organics  
TDS = total dissolved solids

**Notes:**

- <sup>(1)</sup> VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009
- <sup>(2)</sup> Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



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

August 31, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: North Boundry Barrier 8-17-16

OrderNo.: 1608B57

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 13 sample(s) on 8/19/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1608B57**Date Reported: **8/31/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW 3+85**Project:** North Boundry Barrier 8-17-16**Collection Date:** 8/17/2016 10:51:00 AM**Lab ID:** 1608B57-001**Matrix:** AQUEOUS**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>   |
| Diesel Range Organics (DRO)                  | 9.0    | 0.20     |      | mg/L  | 1  | 8/22/2016 12:10:56 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 12:10:56 PM |
| Surr: DNOP                                   | 110    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 12:10:56 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>BCN</b>   |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 2:36:00 AM  |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 2:36:00 AM  |
| Ethylbenzene                                 | 1.1    | 1.0      |      | µg/L  | 1  | 8/23/2016 2:36:00 AM  |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 2:36:00 AM  |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 8/23/2016 2:36:00 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 96.4   | 70-130   |      | %Rec  | 1  | 8/23/2016 2:36:00 AM  |
| Surr: 4-Bromofluorobenzene                   | 87.6   | 70-130   |      | %Rec  | 1  | 8/23/2016 2:36:00 AM  |
| Surr: Dibromofluoromethane                   | 91.8   | 70-130   |      | %Rec  | 1  | 8/23/2016 2:36:00 AM  |
| Surr: Toluene-d8                             | 106    | 70-130   |      | %Rec  | 1  | 8/23/2016 2:36:00 AM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>AG</b>    |
| Gasoline Range Organics (GRO)                | 3.1    | 0.10     |      | mg/L  | 2  | 8/23/2016 12:13:46 PM |
| Surr: BFB                                    | 100    | 70-130   |      | %Rec  | 2  | 8/23/2016 12:13:46 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1608B57**

Date Reported: **8/31/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** OW 8+10

**Project:** North Boundry Barrier 8-17-16

**Collection Date:** 8/17/2016 12:30:00 PM

**Lab ID:** 1608B57-002

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed         |
|----------------------------------------------|--------|----------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>   |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 8/22/2016 1:16:15 PM  |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 1:16:15 PM  |
| Surr: DNOP                                   | 114    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 1:16:15 PM  |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>BCN</b>   |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 3:00:00 AM  |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 3:00:00 AM  |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 3:00:00 AM  |
| Methyl tert-butyl ether (MTBE)               | 4.7    | 1.0      |      | µg/L  | 1  | 8/23/2016 3:00:00 AM  |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 8/23/2016 3:00:00 AM  |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   |      | %Rec  | 1  | 8/23/2016 3:00:00 AM  |
| Surr: 4-Bromofluorobenzene                   | 99.4   | 70-130   |      | %Rec  | 1  | 8/23/2016 3:00:00 AM  |
| Surr: Dibromofluoromethane                   | 95.3   | 70-130   |      | %Rec  | 1  | 8/23/2016 3:00:00 AM  |
| Surr: Toluene-d8                             | 99.5   | 70-130   |      | %Rec  | 1  | 8/23/2016 3:00:00 AM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>AG</b>    |
| Gasoline Range Organics (GRO)                | ND     | 0.050    |      | mg/L  | 1  | 8/23/2016 12:42:39 PM |
| Surr: BFB                                    | 100    | 70-130   |      | %Rec  | 1  | 8/23/2016 12:42:39 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B57

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** OW 11+15

**Project:** North Boundry Barrier 8-17-16

**Collection Date:** 8/17/2016 1:00:00 PM

**Lab ID:** 1608B57-003

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF  | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|-----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |     | Analyst: <b>TOM</b>  |
| Diesel Range Organics (DRO)                  | 540    | 20       |      | mg/L  | 100 | 8/22/2016 2:42:52 PM |
| Motor Oil Range Organics (MRO)               | ND     | 250      |      | mg/L  | 100 | 8/22/2016 2:42:52 PM |
| Surr: DNOP                                   | 0      | 67.9-149 | S    | %Rec  | 100 | 8/22/2016 2:42:52 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |     | Analyst: <b>BCN</b>  |
| Benzene                                      | 3900   | 200      |      | µg/L  | 200 | 8/23/2016 3:23:00 AM |
| Toluene                                      | ND     | 20       |      | µg/L  | 20  | 8/23/2016 3:47:00 AM |
| Ethylbenzene                                 | ND     | 20       |      | µg/L  | 20  | 8/23/2016 3:47:00 AM |
| Methyl tert-butyl ether (MTBE)               | 310    | 20       |      | µg/L  | 20  | 8/23/2016 3:47:00 AM |
| Xylenes, Total                               | ND     | 30       |      | µg/L  | 20  | 8/23/2016 3:47:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   |      | %Rec  | 20  | 8/23/2016 3:47:00 AM |
| Surr: 4-Bromofluorobenzene                   | 98.9   | 70-130   |      | %Rec  | 20  | 8/23/2016 3:47:00 AM |
| Surr: Dibromofluoromethane                   | 97.2   | 70-130   |      | %Rec  | 20  | 8/23/2016 3:47:00 AM |
| Surr: Toluene-d8                             | 99.6   | 70-130   |      | %Rec  | 20  | 8/23/2016 3:47:00 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |     | Analyst: <b>AG</b>   |
| Gasoline Range Organics (GRO)                | 12     | 2.5      |      | mg/L  | 50  | 8/23/2016 1:11:29 PM |
| Surr: BFB                                    | 104    | 70-130   |      | %Rec  | 50  | 8/23/2016 1:11:29 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B57

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** OW 16+60

**Project:** North Boundry Barrier 8-17-16

**Collection Date:** 8/17/2016 1:16:00 PM

**Lab ID:** 1608B57-004

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>  |
| Diesel Range Organics (DRO)                  | 3.8    | 0.20     |      | mg/L  | 1  | 8/22/2016 3:04:33 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 3:04:33 PM |
| Surr: DNOP                                   | 107    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 3:04:33 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>BCN</b>  |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 4:34:00 AM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 4:34:00 AM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 4:34:00 AM |
| Methyl tert-butyl ether (MTBE)               | 410    | 10       |      | µg/L  | 10 | 8/23/2016 4:10:00 AM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 8/23/2016 4:34:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 99.7   | 70-130   |      | %Rec  | 1  | 8/23/2016 4:34:00 AM |
| Surr: 4-Bromofluorobenzene                   | 99.4   | 70-130   |      | %Rec  | 1  | 8/23/2016 4:34:00 AM |
| Surr: Dibromofluoromethane                   | 97.0   | 70-130   |      | %Rec  | 1  | 8/23/2016 4:34:00 AM |
| Surr: Toluene-d8                             | 97.5   | 70-130   |      | %Rec  | 1  | 8/23/2016 4:34:00 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>AG</b>   |
| Gasoline Range Organics (GRO)                | 1.5    | 0.050    |      | mg/L  | 1  | 8/23/2016 2:37:50 PM |
| Surr: BFB                                    | 108    | 70-130   |      | %Rec  | 1  | 8/23/2016 2:37:50 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1608B57**

Date Reported: **8/31/2016**

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** OW 22+00

**Project:** North Boundry Barrier 8-17-16

**Collection Date:** 8/17/2016 1:40:00 PM

**Lab ID:** 1608B57-005

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>  |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 8/22/2016 3:26:21 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 3:26:21 PM |
| Surr: DNOP                                   | 118    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 3:26:21 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>BCN</b>  |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 4:58:00 AM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 4:58:00 AM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 4:58:00 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 4:58:00 AM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 8/23/2016 4:58:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 99.7   | 70-130   |      | %Rec  | 1  | 8/23/2016 4:58:00 AM |
| Surr: 4-Bromofluorobenzene                   | 99.3   | 70-130   |      | %Rec  | 1  | 8/23/2016 4:58:00 AM |
| Surr: Dibromofluoromethane                   | 97.8   | 70-130   |      | %Rec  | 1  | 8/23/2016 4:58:00 AM |
| Surr: Toluene-d8                             | 99.7   | 70-130   |      | %Rec  | 1  | 8/23/2016 4:58:00 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>AG</b>   |
| Gasoline Range Organics (GRO)                | ND     | 0.050    |      | mg/L  | 1  | 8/23/2016 3:06:36 PM |
| Surr: BFB                                    | 100    | 70-130   |      | %Rec  | 1  | 8/23/2016 3:06:36 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B57

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** OW 23+90

**Project:** North Boundry Barrier 8-17-16

**Collection Date:** 8/17/2016 2:05:00 PM

**Lab ID:** 1608B57-006

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>  |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 8/22/2016 4:10:05 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 4:10:05 PM |
| Surr: DNOP                                   | 132    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 4:10:05 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>BCN</b>  |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 5:21:00 AM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 5:21:00 AM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 5:21:00 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 5:21:00 AM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 8/23/2016 5:21:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   |      | %Rec  | 1  | 8/23/2016 5:21:00 AM |
| Surr: 4-Bromofluorobenzene                   | 100    | 70-130   |      | %Rec  | 1  | 8/23/2016 5:21:00 AM |
| Surr: Dibromofluoromethane                   | 94.3   | 70-130   |      | %Rec  | 1  | 8/23/2016 5:21:00 AM |
| Surr: Toluene-d8                             | 98.7   | 70-130   |      | %Rec  | 1  | 8/23/2016 5:21:00 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>AG</b>   |
| Gasoline Range Organics (GRO)                | ND     | 0.050    |      | mg/L  | 1  | 8/23/2016 3:35:26 PM |
| Surr: BFB                                    | 99.8   | 70-130   |      | %Rec  | 1  | 8/23/2016 3:35:26 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B57

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** OW 23+10

**Project:** North Boundry Barrier 8-17-16

**Collection Date:** 8/17/2016 2:15:00 PM

**Lab ID:** 1608B57-007

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>  |
| Diesel Range Organics (DRO)                  | 0.27   | 0.20     |      | mg/L  | 1  | 8/22/2016 4:31:47 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 4:31:47 PM |
| Surr: DNOP                                   | 118    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 4:31:47 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>BCN</b>  |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 5:45:00 AM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 5:45:00 AM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 5:45:00 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 5:45:00 AM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 8/23/2016 5:45:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   |      | %Rec  | 1  | 8/23/2016 5:45:00 AM |
| Surr: 4-Bromofluorobenzene                   | 100    | 70-130   |      | %Rec  | 1  | 8/23/2016 5:45:00 AM |
| Surr: Dibromofluoromethane                   | 94.3   | 70-130   |      | %Rec  | 1  | 8/23/2016 5:45:00 AM |
| Surr: Toluene-d8                             | 100    | 70-130   |      | %Rec  | 1  | 8/23/2016 5:45:00 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>AG</b>   |
| Gasoline Range Organics (GRO)                | 0.17   | 0.050    |      | mg/L  | 1  | 8/23/2016 4:04:15 PM |
| Surr: BFB                                    | 102    | 70-130   |      | %Rec  | 1  | 8/23/2016 4:04:15 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1608B57**Date Reported: **8/31/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW 25+70**Project:** North Boundry Barrier 8-17-16**Collection Date:** 8/17/2016 2:50:00 PM**Lab ID:** 1608B57-008**Matrix:** AQUEOUS**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>  |
| Diesel Range Organics (DRO)                  | ND     | 0.20     |      | mg/L  | 1  | 8/22/2016 4:53:37 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 4:53:37 PM |
| Surr: DNOP                                   | 116    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 4:53:37 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>BCN</b>  |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:08:00 AM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:08:00 AM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:08:00 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:08:00 AM |
| Xylenes, Total                               | 2.6    | 1.5      |      | µg/L  | 1  | 8/23/2016 6:08:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 99.7   | 70-130   |      | %Rec  | 1  | 8/23/2016 6:08:00 AM |
| Surr: 4-Bromofluorobenzene                   | 103    | 70-130   |      | %Rec  | 1  | 8/23/2016 6:08:00 AM |
| Surr: Dibromofluoromethane                   | 95.5   | 70-130   |      | %Rec  | 1  | 8/23/2016 6:08:00 AM |
| Surr: Toluene-d8                             | 99.6   | 70-130   |      | %Rec  | 1  | 8/23/2016 6:08:00 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>AG</b>   |
| Gasoline Range Organics (GRO)                | 0.078  | 0.050    |      | mg/L  | 1  | 8/23/2016 4:33:02 PM |
| Surr: BFB                                    | 96.7   | 70-130   |      | %Rec  | 1  | 8/23/2016 4:33:02 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|                    |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B57

Date Reported: 8/31/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW 1+50

Project: North Boundry Barrier 8-17-16

Collection Date: 8/17/2016 3:51:00 PM

Lab ID: 1608B57-009

Matrix: AQUEOUS

Received Date: 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: TOM         |
| Diesel Range Organics (DRO)                  | 4.2    | 0.20     |      | mg/L  | 1  | 8/22/2016 5:15:12 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 5:15:12 PM |
| Surr: DNOP                                   | 113    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 5:15:12 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: BCN         |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:32:00 AM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:32:00 AM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:32:00 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:32:00 AM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 8/23/2016 6:32:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130   |      | %Rec  | 1  | 8/23/2016 6:32:00 AM |
| Surr: 4-Bromofluorobenzene                   | 92.8   | 70-130   |      | %Rec  | 1  | 8/23/2016 6:32:00 AM |
| Surr: Dibromofluoromethane                   | 93.8   | 70-130   |      | %Rec  | 1  | 8/23/2016 6:32:00 AM |
| Surr: Toluene-d8                             | 102    | 70-130   |      | %Rec  | 1  | 8/23/2016 6:32:00 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: AG          |
| Gasoline Range Organics (GRO)                | 2.9    | 0.050    |      | mg/L  | 1  | 8/23/2016 5:01:46 PM |
| Surr: BFB                                    | 96.4   | 70-130   |      | %Rec  | 1  | 8/23/2016 5:01:46 PM |

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

|             |    |                                                       |    |                                                           |
|-------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| Qualifiers: | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|             | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|             | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|             | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|             | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|             | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|             |    |                                                       |    |                                                           |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B57

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** OW 0+60

**Project:** North Boundry Barrier 8-17-16

**Collection Date:** 8/17/2016 4:10:00 PM

**Lab ID:** 1608B57-010

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL      | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|----------|------|-------|----|----------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b>        |        |          |      |       |    | Analyst: <b>TOM</b>  |
| Diesel Range Organics (DRO)                  | 1.3    | 0.20     |      | mg/L  | 1  | 8/22/2016 5:37:00 PM |
| Motor Oil Range Organics (MRO)               | ND     | 2.5      |      | mg/L  | 1  | 8/22/2016 5:37:00 PM |
| Surr: DNOP                                   | 118    | 67.9-149 |      | %Rec  | 1  | 8/22/2016 5:37:00 PM |
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |          |      |       |    | Analyst: <b>BCN</b>  |
| Benzene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:56:00 AM |
| Toluene                                      | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:56:00 AM |
| Ethylbenzene                                 | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:56:00 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0      |      | µg/L  | 1  | 8/23/2016 6:56:00 AM |
| Xylenes, Total                               | ND     | 1.5      |      | µg/L  | 1  | 8/23/2016 6:56:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 99.3   | 70-130   |      | %Rec  | 1  | 8/23/2016 6:56:00 AM |
| Surr: 4-Bromofluorobenzene                   | 89.2   | 70-130   |      | %Rec  | 1  | 8/23/2016 6:56:00 AM |
| Surr: Dibromofluoromethane                   | 94.7   | 70-130   |      | %Rec  | 1  | 8/23/2016 6:56:00 AM |
| Surr: Toluene-d8                             | 96.7   | 70-130   |      | %Rec  | 1  | 8/23/2016 6:56:00 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>      |        |          |      |       |    | Analyst: <b>AG</b>   |
| Gasoline Range Organics (GRO)                | 0.70   | 0.050    |      | mg/L  | 1  | 8/23/2016 5:30:30 PM |
| Surr: BFB                                    | 109    | 70-130   |      | %Rec  | 1  | 8/23/2016 5:30:30 PM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B57

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Field Blank

**Project:** North Boundry Barrier 8-17-16

**Collection Date:** 8/17/2016 4:40:00 PM

**Lab ID:** 1608B57-011

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>BCN</b>  |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:19:00 AM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:19:00 AM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:19:00 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:19:00 AM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 7:19:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 99.9   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:19:00 AM |
| Surr: 4-Bromofluorobenzene                   | 102    | 70-130 |      | %Rec  | 1  | 8/23/2016 7:19:00 AM |
| Surr: Dibromofluoromethane                   | 95.6   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:19:00 AM |
| Surr: Toluene-d8                             | 99.3   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:19:00 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B57

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** Equipement Blank

**Project:** North Boundry Barrier 8-17-16

**Collection Date:** 8/16/2016 2:15:00 PM

**Lab ID:** 1608B57-012

**Matrix:** AQUEOUS

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>BCN</b>  |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:43:00 AM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:43:00 AM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:43:00 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:43:00 AM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 7:43:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130 |      | %Rec  | 1  | 8/23/2016 7:43:00 AM |
| Surr: 4-Bromofluorobenzene                   | 100    | 70-130 |      | %Rec  | 1  | 8/23/2016 7:43:00 AM |
| Surr: Dibromofluoromethane                   | 95.7   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:43:00 AM |
| Surr: Toluene-d8                             | 99.2   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:43:00 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1608B57

Date Reported: 8/31/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** TRIP BLANK

**Project:** North Boundry Barrier 8-17-16

**Collection Date:**

**Lab ID:** 1608B57-013

**Matrix:** TRIP BLANK

**Received Date:** 8/19/2016 7:30:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>BCN</b>  |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:06:00 AM |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:06:00 AM |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:06:00 AM |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:06:00 AM |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 8:06:00 AM |
| Surr: 1,2-Dichloroethane-d4                  | 99.1   | 70-130 |      | %Rec  | 1  | 8/23/2016 8:06:00 AM |
| Surr: 4-Bromofluorobenzene                   | 102    | 70-130 |      | %Rec  | 1  | 8/23/2016 8:06:00 AM |
| Surr: Dibromofluoromethane                   | 96.9   | 70-130 |      | %Rec  | 1  | 8/23/2016 8:06:00 AM |
| Surr: Toluene-d8                             | 100    | 70-130 |      | %Rec  | 1  | 8/23/2016 8:06:00 AM |

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

|                    |    |                                                       |    |                                                           |
|--------------------|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
|                    | D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|                    | H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
|                    | ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|                    | R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
|                    | S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608B57

31-Aug-16

Client: Western Refining Southwest, Inc.

Project: North Boundry Barrier 8-17-16

|                             |                |                |           |             |                                |          |           |      |          |      |
|-----------------------------|----------------|----------------|-----------|-------------|--------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 1608B57-001BMS | SampType:      | MS        | TestCode:   | EPA Method 8015D: Diesel Range |          |           |      |          |      |
| Client ID:                  | OW 3+85        | Batch ID:      | 27092     | RunNo:      | 36661                          |          |           |      |          |      |
| Prep Date:                  | 8/22/2016      | Analysis Date: | 8/22/2016 | SeqNo:      | 1135682                        | Units:   | mg/L      |      |          |      |
| Analyte                     | Result         | PQL            | SPK value | SPK Ref Val | %REC                           | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 5.9            | 0.20           | 2.500     | 8.991       | -124                           | 73.3     | 174       |      |          | S    |
| Surr: DNOP                  | 0.26           |                | 0.2500    |             | 105                            | 67.9     | 149       |      |          |      |

|                             |                 |                |           |             |                                |          |           |      |          |      |
|-----------------------------|-----------------|----------------|-----------|-------------|--------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 1608B57-001BMSD | SampType:      | MSD       | TestCode:   | EPA Method 8015D: Diesel Range |          |           |      |          |      |
| Client ID:                  | OW 3+85         | Batch ID:      | 27092     | RunNo:      | 36661                          |          |           |      |          |      |
| Prep Date:                  | 8/22/2016       | Analysis Date: | 8/22/2016 | SeqNo:      | 1135683                        | Units:   | mg/L      |      |          |      |
| Analyte                     | Result          | PQL            | SPK value | SPK Ref Val | %REC                           | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 6.0             | 0.20           | 2.500     | 8.991       | -119                           | 73.3     | 174       | 1.74 | 20       | S    |
| Surr: DNOP                  | 0.28            |                | 0.2500    |             | 112                            | 67.9     | 149       | 0    | 0        |      |

|                             |           |                |           |             |                                |          |           |      |          |      |
|-----------------------------|-----------|----------------|-----------|-------------|--------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | LCS-27092 | SampType:      | LCS       | TestCode:   | EPA Method 8015D: Diesel Range |          |           |      |          |      |
| Client ID:                  | LCSW      | Batch ID:      | 27092     | RunNo:      | 36661                          |          |           |      |          |      |
| Prep Date:                  | 8/22/2016 | Analysis Date: | 8/22/2016 | SeqNo:      | 1135687                        | Units:   | mg/L      |      |          |      |
| Analyte                     | Result    | PQL            | SPK value | SPK Ref Val | %REC                           | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 2.9       | 0.20           | 2.500     | 0           | 118                            | 65.4     | 162       |      |          |      |
| Surr: DNOP                  | 0.27      |                | 0.2500    |             | 107                            | 67.9     | 149       |      |          |      |

|                                |           |                |           |             |                                |          |           |      |          |      |
|--------------------------------|-----------|----------------|-----------|-------------|--------------------------------|----------|-----------|------|----------|------|
| Sample ID                      | MB-27092  | SampType:      | MBLK      | TestCode:   | EPA Method 8015D: Diesel Range |          |           |      |          |      |
| Client ID:                     | PBW       | Batch ID:      | 27092     | RunNo:      | 36661                          |          |           |      |          |      |
| Prep Date:                     | 8/22/2016 | Analysis Date: | 8/22/2016 | SeqNo:      | 1135688                        | Units:   | mg/L      |      |          |      |
| Analyte                        | Result    | PQL            | SPK value | SPK Ref Val | %REC                           | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20           |           |             |                                |          |           |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5            |           |             |                                |          |           |      |          |      |
| Surr: DNOP                     | 0.55      |                | 0.5000    |             | 109                            | 67.9     | 149       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608B57

31-Aug-16

Client: Western Refining Southwest, Inc.

Project: North Boundry Barrier 8-17-16

|                             |            |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs4 |     | SampType: LCS            |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | LCSW       |     | Batch ID: C36665         |             | RunNo: 36665                                    |          |             |      |          |      |
| Prep Date:                  |            |     | Analysis Date: 8/22/2016 |             | SeqNo: 1136405                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result     | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 19         | 1.0 | 20.00                    | 0           | 96.7                                            | 70       | 130         |      |          |      |
| Toluene                     | 20         | 1.0 | 20.00                    | 0           | 98.5                                            | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10         |     | 10.00                    |             | 100                                             | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.9        |     | 10.00                    |             | 98.8                                            | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.9        |     | 10.00                    |             | 99.0                                            | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.8        |     | 10.00                    |             | 97.5                                            | 70       | 130         |      |          |      |

|                                |        |                          |           |             |                                                 |          |             |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | rb3    | SampType: MBLK           |           |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: C36665         |           |             | RunNo: 36665                                    |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 8/22/2016 |           |             | SeqNo: 1136406                                  |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Xylenes, Total                 | ND     | 1.5                      |           |             |                                                 |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 10     |                          | 10.00     |             | 101                                             | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene     | 10     |                          | 10.00     |             | 99.7                                            | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane     | 9.6    |                          | 10.00     |             | 95.9                                            | 70       | 130         |      |          |      |
| Surr: Toluene-d8               | 10     |                          | 10.00     |             | 99.8                                            | 70       | 130         |      |          |      |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608B57

31-Aug-16

Client: Western Refining Southwest, Inc.

Project: North Boundry Barrier 8-17-16

|                               |               |       |                          |             |                                            |          |             |      |          |      |
|-------------------------------|---------------|-------|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 2.5ug gro lcs |       | SampType: LCS            |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | LCSW          |       | Batch ID: R36700         |             | RunNo: 36700                               |          |             |      |          |      |
| Prep Date:                    |               |       | Analysis Date: 8/23/2016 |             | SeqNo: 1137274                             |          | Units: mg/L |      |          |      |
| Analyte                       | Result        | PQL   | SPK value                | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.41          | 0.050 | 0.5000                   | 0           | 82.5                                       | 75.4     | 118         |      |          |      |
| Surr: BFB                     | 10            |       | 10.00                    |             | 101                                        | 70       | 130         |      |          |      |

|                               |        |                          |           |             |                                            |          |             |      |          |      |
|-------------------------------|--------|--------------------------|-----------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | rb     | SampType: MBLK           |           |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | PBW    | Batch ID: R36700         |           |             | RunNo: 36700                               |          |             |      |          |      |
| Prep Date:                    |        | Analysis Date: 8/23/2016 |           |             | SeqNo: 1137275                             |          | 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                     | 9.8    |                          | 10.00     |             | 98.1                                       | 70       | 130         |      |          |      |

|                               |                |     |                          |             |                                            |          |             |      |          |      |
|-------------------------------|----------------|-----|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 1608b57-003ams |     | SampType: MS             |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | OW 11+15       |     | Batch ID: R36700         |             | RunNo: 36700                               |          |             |      |          |      |
| Prep Date:                    |                |     | Analysis Date: 8/23/2016 |             | SeqNo: 1137698                             |          | Units: mg/L |      |          |      |
| Analyte                       | Result         | PQL | SPK value                | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 40             | 2.5 | 25.00                    | 11.89       | 113                                        | 53.8     | 128         |      |          |      |
| Surr: BFB                     | 540            |     | 500.0                    |             | 107                                        | 70       | 130         |      |          |      |

|                               |                 |     |                          |             |                                            |          |             |      |          |      |
|-------------------------------|-----------------|-----|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 1608b57-003amsd |     | SampType: MSD            |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | OW 11+15        |     | Batch ID: R36700         |             | RunNo: 36700                               |          |             |      |          |      |
| Prep Date:                    |                 |     | Analysis Date: 8/23/2016 |             | SeqNo: 1137699                             |          | Units: mg/L |      |          |      |
| Analyte                       | Result          | PQL | SPK value                | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 39              | 2.5 | 25.00                    | 11.89       | 107                                        | 53.8     | 128         | 3.70 | 20       |      |
| Surr: BFB                     | 510             |     | 500.0                    |             | 102                                        | 70       | 130         | 0    | 0        |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

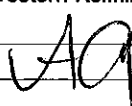
# Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1608B57

RcptNo: 1

Received by/date:



08/19/16

Logged By: Ashley Gallegos

8/19/2016 7:30:00 AM



Completed By: Ashley Gallegos

8/19/2016 10:16:49 AM



Reviewed By:



08/19/16

## Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

 # of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

 Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

## 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 2.1     | Good      | Yes         |         |           |           |



**Turn-Around Time:**

☒ Standard ☐ Rush

Project Name: North Boundary Barrier

Project #: Annual

**PO#12615520**

Project Manager:

### X Level 4 (Full Validation)

Sampler  
Norwood A 11/1/60

|         |                                         |                             |
|---------|-----------------------------------------|-----------------------------|
| Sample: | 110 mg/L                                | Wick                        |
| On Ice: | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

Sample Temperature: 2.1



| Container | Preservative | HEAL No. |
|-----------|--------------|----------|
| 1         |              |          |
| 2         |              |          |
| 3         |              |          |
| 4         |              |          |
| 5         |              |          |
| 6         |              |          |
| 7         |              |          |
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| 98        |              |          |
| 99        |              |          |
| 100       |              |          |

| type and # | type |
|------------|------|
| 11008257   |      |

|       |     |      |
|-------|-----|------|
| 5-VOA | HCl | 0.00 |
|       |     | 0.00 |

|          |      |     |
|----------|------|-----|
| 1-500 ml | 1 ml | 100 |
| 1-500 ml | 1 ml | 100 |

| Amber   | Cool |
|---------|------|
| 1000 nm |      |

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[illegible][illegible][illegible][illegible][illegible][illegible]

10. *Journal of the American Medical Association*, 1997; 277: 1039-1043.

[illegible]

|              |      |      |
|--------------|------|------|
| Received by: | Date | Time |
|--------------|------|------|

8/18/10 1751

Received by: \_\_\_\_\_ Date / Time \_\_\_\_\_

08/10/10

contracted to other accredited laboratories. This serves as notice of this

0

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.





# Chain-of-Custody Record

Client: **Western Refining**

Mailing Address: **50 CR 4990**

**Bloomfield, NM 87413**

Phone #: **505-632-4135**

email or Fax#:

QA/QC Package:

☐ Standard

☐ Other

☒ EDD (Type) \_\_\_\_\_

☒ Level 4 (Full Validation)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: **North Boundary Barrier**

Date: **8-17-2016**

Project #: Annual

**PO#12615520**

Project Manager:

Sampler: **Michael A Wicker**

On Ice ☒ Yes ☐ No

Sample Temperature: **27**

Date Time Matrix Sample Request ID

8-17-16 1340 H<sub>2</sub>O OW 22+00  
↓ ↓ H<sub>2</sub>O OW 22+00

Container Type and #

6-VOA HCl  
1-500 ml Cool  
Amber

Preservative Type

HEAL No  
1108B57

27

## Analysis Request

|                            |                              |                             |                    |                    |                        |               |                                                                                        |                              |                             |                 |                    |                      |
|----------------------------|------------------------------|-----------------------------|--------------------|--------------------|------------------------|---------------|----------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------|--------------------|----------------------|
| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH (8310 or 8270SIMS) | RCRA 8 Metals | Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> ) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | 8015B DRO Extended | Air Bubbles (Y or N) |
|                            |                              | X                           |                    |                    |                        |               |                                                                                        | X                            |                             |                 | X                  |                      |

Remarks: See attachment for full analytical list

Received by: **Andreas Waeber** Date Time: **8/18/16 1540**

Relinquished by: **Andreas Waeber** Date Time: **8/19/16 0730**

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.





|                                                                                                 |                                                                            |                   |
|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------|
| <b>Chain-of-Custody Record</b>                                                                  |                                                                            | Turn-Around Time: |
| Client: <b>Western Refining</b>                                                                 | <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush |                   |
| Mailing Address: <b>50 CR 4990</b>                                                              | Project Name: <b>North Boudry Barrier</b>                                  |                   |
| <b>Bloomfield, NM 87413</b>                                                                     | Date: <b>8-17-2016</b>                                                     |                   |
| Phone #: <b>505-632-4135</b>                                                                    | Project #: Annual                                                          |                   |
| email or Fax#:                                                                                  | <b>PO#12615520</b>                                                         |                   |
| QA/QC Package:                                                                                  | Project Manager:                                                           |                   |
| <input type="checkbox"/> Standard <input checked="" type="checkbox"/> Level 4 (Full Validation) |                                                                            |                   |
| <input type="checkbox"/> Other _____                                                            |                                                                            |                   |
| <input checked="" type="checkbox"/> EDD (Type) _____                                            |                                                                            |                   |
| Sampler: <b>Michael A Wicker</b>                                                                |                                                                            |                   |
| On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                     |                                                                            |                   |
| Sample Temperature: <b>21</b>                                                                   |                                                                            |                   |

|                     |                                              |                               |
|---------------------|----------------------------------------------|-------------------------------|
| Turn-Around Time:   | <input checked="" type="checkbox"/> Standard | <input type="checkbox"/> Rush |
| Project Name:       | North Boundry Barrier                        |                               |
| Date:               | 8-17-2016                                    |                               |
| Project #:          | Annual                                       |                               |
| PO#                 | 12615520                                     |                               |
| Project Manager:    |                                              |                               |
| Sampler:            | Michael A Wicker                             |                               |
| On Ice:             | <input checked="" type="checkbox"/> Yes      | <input type="checkbox"/> No   |
| Sample Temperature: | 3.1                                          |                               |

|                                   |                                    |
|-----------------------------------|------------------------------------|
| <b>Chain-of-Custody Record</b>    |                                    |
| Client:                           | <b>Western Refining</b>            |
|                                   |                                    |
| Mailing Address:                  | <b>50 CR 4990</b>                  |
|                                   |                                    |
|                                   | <b>Bloomfield, NM 87413</b>        |
| Phone #:                          | <b>505-632-4135</b>                |
| email or Fax#:                    |                                    |
| QA/QC Package:                    | <b>X</b> Level 4 (Full Validation) |
| <input type="checkbox"/> Standard |                                    |
| <input type="checkbox"/> Other    |                                    |
| <b>X</b> EDD (Type)               |                                    |

[illegible]

| Date    | Time | Matrix           | Sample Request ID |
|---------|------|------------------|-------------------|
| 8-17-16 | B00  | H <sub>2</sub> O | OW 11+15          |
| ↓       | ↓    | H <sub>2</sub> O | OW 11+15          |
|         |      |                  |                   |
|         |      |                  |                   |
|         |      |                  |                   |
|         |      |                  |                   |
|         |      |                  |                   |

|         |       |                  |              |          |      |
|---------|-------|------------------|--------------|----------|------|
| Date:   | Time: | Relinquished by: | Received by: | Date     | Time |
| 8-19-16 | 1540  | [Signature]      | [Signature]  | 8/18/16  | 1540 |
| Date:   | Time: | Relinquished by: | Received by: | Date     | Time |
| 8/18/16 | 2040  | [Signature]      | [Signature]  | 08/19/16 | 0730 |

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this.

[illegible]

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.







**Analytical Methods and Target Analytes**  
**Facility-Wide Groundwater Monitoring Plan - June 2012**  
**Western Refining - Bloomfield Refinery**

|                                                                      |
|----------------------------------------------------------------------|
| <b>VOCs (EPA Method 8260B) <sup>(1)</sup></b>                        |
| Target List                                                          |
| <i>Benzene</i>                                                       |
| <i>Toluene</i>                                                       |
| <i>Ethylbenzene</i>                                                  |
| <i>Xylenes</i>                                                       |
| <i>Methyl tert butyl ether (MTBE)</i>                                |
| <b>SVOCs - (EPA Method 8270)</b>                                     |
| Method List                                                          |
| <b>TPH-GRO (EPA Method 8015B)</b>                                    |
| Gasoline Range Organics                                              |
| <b>TPH-DRO (EPA Method 8015B)</b>                                    |
| Diesel Range Organics                                                |
| Motor Oil Range Organics                                             |
| <b>Total Carbon Dioxide (Laboratory Calculated)</b>                  |
| Dissolved CO <sub>2</sub>                                            |
| <b>Specific Conductivity (EPA Method 120.1 or Field Measurement)</b> |
| Specific Conductance                                                 |
| <b>TDS (EPA Method 160.1 or Field Measurement)</b>                   |
| Total Dissolved Solids                                               |
| <b>General Chemistry - Anions (EPA method 300.0)</b>                 |
| <i>Fluoride</i>                                                      |
| <i>Chloride</i>                                                      |
| <i>Bromide</i>                                                       |
| <i>Nitrogen, Nitrite (as N)</i>                                      |
| <i>Nitrogen, Nitrate (as N)</i>                                      |
| <i>Phosphorous, Orthophosphate (As P)</i>                            |
| <i>Sulfate</i>                                                       |
| <b>General Chemistry - Alkalinity (EPA Method 310.1)</b>             |
| <i>Alkalinity, Total</i>                                             |
| <i>Carbonate</i>                                                     |
| <i>Bicarbonate</i>                                                   |

|                                                         |
|---------------------------------------------------------|
| <b>Total Recoverable Metals (EPA Method 6010B/7470)</b> |
| Target List                                             |
| <i>Arsenic</i>                                          |
| <i>Barium</i>                                           |
| <i>Cadmium</i>                                          |
| <i>Chromium</i>                                         |
| <i>Lead</i>                                             |
| <i>Mercury</i>                                          |
| <i>Selenium</i>                                         |
| <i>Silver</i>                                           |
| Target List (for River Terrace Sampling Events Only)    |
| <i>Lead</i>                                             |
| <i>Mercury (DW-1 ONLY)</i>                              |
| <b>Dissolved Metals (EPA Method 6010B / 7470)</b>       |
| Target List (for Refinery Complex, Outfalls and River)  |
| <i>Arsenic</i>                                          |
| <i>Barium</i>                                           |
| <i>Cadmium</i>                                          |
| <i>Calcium</i>                                          |
| <i>Chromium</i>                                         |
| <i>Copper</i>                                           |
| <i>Iron</i>                                             |
| <i>Lead</i>                                             |
| <i>Magnesium</i>                                        |
| <i>Manganese</i>                                        |
| <i>Mercury</i>                                          |
| <i>Potassium</i>                                        |
| <i>Selenium</i>                                         |
| <i>Silver</i>                                           |
| <i>Sodium</i>                                           |
| <i>Uranium</i>                                          |
| <i>Zinc</i>                                             |

TPH = total petroleum hydrocarbons  
GRO = gasoline range organics  
VOCs = volatile organic compounds  
DRO = diesel range organics  
TDS = total dissolved solids

- Notes:**
- <sup>(1)</sup> VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009
- <sup>(2)</sup> Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



*Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

September 26, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: Down Gradient Wells 8-18-2016

OrderNo.: 1608C29

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/19/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-001A

**Client Sample ID:** MW-37  
**Collection Date:** 8/18/2016 10:15:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                      | Analyst: BCN |
| Benzene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Naphthalene                        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Acetone                            | ND     | 10  |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 2-Butanone                         | ND     | 10  |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Carbon disulfide                   | ND     | 10  |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 1 of 75                                    |



**Analytical Report**

Lab Order: 1608C29

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-001A

**Client Sample ID:** MW-37  
**Collection Date:** 8/18/2016 10:15:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID            |
|------------------------------------|--------|--------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: <b>BCN</b> |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| tert-Butylbenzene                  | 0.34   | 1.0    | J    | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Surr: 1,2-Dichloroethane-d4        | 103    | 70-130 |      | %Rec  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Surr: 4-Bromofluorobenzene         | 99.8   | 70-130 |      | %Rec  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Surr: Dibromofluoromethane         | 97.6   | 70-130 |      | %Rec  | 1  | 8/24/2016 3:56:00 PM | R36743              |
| Surr: Toluene-d8                   | 98.1   | 70-130 |      | %Rec  | 1  | 8/24/2016 3:56:00 PM | R36743              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 2 of 75                                    |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-001B

**Client Sample ID:** MW-37  
**Collection Date:** 8/18/2016 10:15:00 AM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed         | Batch ID            |
|-----------------------------------------|--------|----------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                       | Analyst: <b>NSB</b> |
| Gasoline Range Organics (GRO)           | ND     | 0.050    |      | mg/L  | 1  | 8/26/2016 11:06:39 AM | R36808              |
| Surr: BFB                               | 88.0   | 66.4-120 |      | %Rec  | 1  | 8/26/2016 11:06:39 AM | R36808              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-001C

**Client Sample ID:** MW-37  
**Collection Date:** 8/18/2016 10:15:00 AM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/23/2016 6:11:56 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 6:11:56 PM | 27114               |
| Surr: DNOP                            | 113    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 6:11:56 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-001D

**Client Sample ID:** MW-37  
**Collection Date:** 8/18/2016 10:15:00 AM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed         | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|-----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 690    | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 5:52:53 PM  | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                       | Analyst: <b>MRA</b> |
| Fluoride                                        | 0.60   | 0.10  |      | mg/L                   | 1  | 8/27/2016 12:50:29 AM | R36827              |
| Chloride                                        | 220    | 10    |      | mg/L                   | 20 | 9/1/2016 4:03:49 PM   | R36952              |
| Bromide                                         | 2.9    | 0.10  |      | mg/L                   | 1  | 9/1/2016 3:51:24 PM   | R36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND     | 0.50  | H    | mg/L                   | 1  | 8/27/2016 12:50:29 AM | R36827              |
| Sulfate                                         | 270    | 10    | *    | mg/L                   | 20 | 9/1/2016 4:03:49 PM   | R36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 4:16:59 PM  | R36847              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 766.7  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:52:53 PM  | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:52:53 PM  | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 766.7  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:52:53 PM  | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 5 of 75                                    |

**Analytical Report**Lab Order: **1608C29****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-001E

**Client Sample ID:** MW-37  
**Collection Date:** 8/18/2016 10:15:00 AM  
**Matrix:** Aqueous

| Analyses                                   | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID            |
|--------------------------------------------|--------|---------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |         |      |       |    |                       | Analyst: <b>pmf</b> |
| Mercury                                    | ND     | 0.00020 |      | mg/L  | 1  | 8/24/2016 10:33:53 AM | 27127               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |         |      |       |    |                       | Analyst: <b>MED</b> |
| Arsenic                                    | ND     | 0.020   |      | mg/L  | 1  | 8/25/2016 1:48:27 PM  | 27124               |
| Barium                                     | 0.27   | 0.020   |      | mg/L  | 1  | 8/25/2016 1:48:27 PM  | 27124               |
| Cadmium                                    | ND     | 0.0020  |      | mg/L  | 1  | 8/25/2016 1:48:27 PM  | 27124               |
| Chromium                                   | 0.0034 | 0.0060  | J    | mg/L  | 1  | 8/25/2016 1:48:27 PM  | 27124               |
| Lead                                       | 0.0068 | 0.0050  |      | mg/L  | 1  | 8/25/2016 1:48:27 PM  | 27124               |
| Selenium                                   | ND     | 0.050   |      | mg/L  | 1  | 8/25/2016 1:48:27 PM  | 27124               |
| Silver                                     | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 1:48:27 PM  | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 6 of 75                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-001F

**Client Sample ID:** MW-37  
**Collection Date:** 8/18/2016 10:15:00 AM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                       | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 8/24/2016 10:40:11 AM | 27127        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                       | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Barium                                    | 0.22   | 0.020   |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Calcium                                   | 86     | 1.0     |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Iron                                      | 1.6    | 0.10    |      | mg/L  | 5  | 9/7/2016 5:42:01 PM   | A37036       |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Magnesium                                 | 19     | 1.0     |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Manganese                                 | 0.96   | 0.0020  |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Potassium                                 | 2.9    | 1.0     |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |
| Sodium                                    | 460    | 5.0     |      | mg/L  | 5  | 9/7/2016 5:42:01 PM   | A37036       |
| Uranium                                   | 0.017  | 0.10    | J    | mg/L  | 1  | 9/12/2016 12:01:14 PM | A37126       |
| Zinc                                      | 0.016  | 0.020   | J    | mg/L  | 1  | 9/7/2016 5:40:24 PM   | A37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 7 of 75                                    |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-002A

**Client Sample ID:** MW-34  
**Collection Date:** 8/18/2016 11:00:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                      | Analyst: BCN |
| Benzene                            | 0.56   | 1.0 | J    | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Methyl tert-butyl ether (MTBE)     | 0.73   | 1.0 | J    | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Naphthalene                        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Acetone                            | ND     | 10  |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 2-Butanone                         | ND     | 10  |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Carbon disulfide                   | ND     | 10  |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 8 of 75                                    |

**Analytical Report**

Lab Order: 1608C29

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-002A

**Client Sample ID:** MW-34  
**Collection Date:** 8/18/2016 11:00:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID            |
|------------------------------------|--------|--------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: <b>BCN</b> |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Isopropylbenzene                   | 2.6    | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| 4-Isopropyltoluene                 | 0.47   | 1.0    | J    | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| n-Propylbenzene                    | 1.5    | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| sec-Butylbenzene                   | 2.6    | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| tert-Butylbenzene                  | 1.7    | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Surr: 1,2-Dichloroethane-d4        | 99.6   | 70-130 |      | %Rec  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Surr: 4-Bromofluorobenzene         | 87.6   | 70-130 |      | %Rec  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Surr: Dibromofluoromethane         | 96.0   | 70-130 |      | %Rec  | 1  | 8/24/2016 4:20:00 PM | R36743              |
| Surr: Toluene-d8                   | 99.3   | 70-130 |      | %Rec  | 1  | 8/24/2016 4:20:00 PM | R36743              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 9 of 75                                    |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-002B

**Client Sample ID:** MW-34  
**Collection Date:** 8/18/2016 11:00:00 AM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed         | Batch ID            |
|-----------------------------------------|--------|----------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                       | Analyst: <b>NSB</b> |
| Gasoline Range Organics (GRO)           | 0.87   | 0.050    |      | mg/L  | 1  | 8/26/2016 11:31:09 AM | R36808              |
| Surr: BFB                               | 155    | 66.4-120 | S    | %Rec  | 1  | 8/26/2016 11:31:09 AM | R36808              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-002C

**Client Sample ID:** MW-34  
**Collection Date:** 8/18/2016 11:00:00 AM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | 0.89   | 0.20     |      | mg/L  | 1  | 8/23/2016 6:33:30 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 6:33:30 PM | 27114               |
| Surr: DNOP                            | 108    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 6:33:30 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-002D

**Client Sample ID:** MW-34  
**Collection Date:** 8/18/2016 11:00:00 AM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed        | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 930    | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 6:28:56 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                      | Analyst: <b>LGT</b> |
| Fluoride                                        | 0.38   | 0.10  |      | mg/L                   | 1  | 9/1/2016 4:16:13 PM  | R36952              |
| Chloride                                        | 260    | 10    | *    | mg/L                   | 20 | 9/1/2016 4:28:38 PM  | R36952              |
| Bromide                                         | 2.2    | 0.10  |      | mg/L                   | 1  | 9/1/2016 4:16:13 PM  | R36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | 2.0    | 2.5   | JH   | mg/L                   | 5  | 8/27/2016 1:15:18 AM | R36827              |
| Sulfate                                         | 340    | 10    | *    | mg/L                   | 20 | 9/1/2016 4:28:38 PM  | R36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 5:06:38 PM | R36847              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 978.9  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 6:28:56 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 6:28:56 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 978.9  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 6:28:56 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-002E

**Client Sample ID:** MW-34  
**Collection Date:** 8/18/2016 11:00:00 AM  
**Matrix:** Aqueous

| Analyses                                   | Result   | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID            |
|--------------------------------------------|----------|---------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |          |         |      |       |    |                       | Analyst: <b>pmf</b> |
| Mercury                                    | 0.000062 | 0.00020 | J    | mg/L  | 1  | 8/24/2016 10:42:13 AM | 27127               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |          |         |      |       |    |                       | Analyst: <b>MED</b> |
| Arsenic                                    | 0.010    | 0.020   | J    | mg/L  | 1  | 8/25/2016 1:51:55 PM  | 27124               |
| Barium                                     | 0.56     | 0.020   |      | mg/L  | 1  | 8/25/2016 1:51:55 PM  | 27124               |
| Cadmium                                    | ND       | 0.0020  |      | mg/L  | 1  | 8/25/2016 1:51:55 PM  | 27124               |
| Chromium                                   | ND       | 0.0060  |      | mg/L  | 1  | 8/25/2016 1:51:55 PM  | 27124               |
| Lead                                       | ND       | 0.0050  |      | mg/L  | 1  | 8/25/2016 1:51:55 PM  | 27124               |
| Selenium                                   | ND       | 0.050   |      | mg/L  | 1  | 8/25/2016 1:51:55 PM  | 27124               |
| Silver                                     | ND       | 0.0050  |      | mg/L  | 1  | 8/25/2016 1:51:55 PM  | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C29

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-002F

**Client Sample ID:** MW-34  
**Collection Date:** 8/18/2016 11:00:00 AM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID            |
|-------------------------------------------|--------|---------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                       | Analyst: <b>pmf</b> |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 8/24/2016 10:44:16 AM | 27127               |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                       | Analyst: <b>MED</b> |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |
| Barium                                    | 0.40   | 0.020   |      | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |
| Calcium                                   | 150    | 5.0     |      | mg/L  | 5  | 9/7/2016 5:45:34 PM   | A37036              |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |
| Iron                                      | 4.5    | 0.10    |      | mg/L  | 5  | 9/7/2016 5:45:34 PM   | A37036              |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |
| Magnesium                                 | 30     | 1.0     |      | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |
| Manganese                                 | 3.6    | 0.010   |      | mg/L  | 5  | 9/7/2016 5:45:34 PM   | A37036              |
| Potassium                                 | 2.1    | 1.0     |      | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |
| Sodium                                    | 490    | 10      |      | mg/L  | 10 | 9/12/2016 12:04:12 PM | A37126              |
| Uranium                                   | 0.0091 | 0.10    | J    | mg/L  | 1  | 9/12/2016 12:02:43 PM | A37126              |
| Zinc                                      | 0.011  | 0.020   | J    | mg/L  | 1  | 9/7/2016 5:43:57 PM   | A37036              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-003A

**Client Sample ID:** MW-35  
**Collection Date:** 8/18/2016 11:40:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                      | Analyst: BCN |
| Benzene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Methyl tert-butyl ether (MTBE)     | 0.42   | 1.0 | J    | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,2,4-Trimethylbenzene             | 25     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Naphthalene                        | 0.41   | 2.0 | J    | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1-Methylnaphthalene                | 0.84   | 4.0 | J    | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 2-Methylnaphthalene                | 0.79   | 4.0 | J    | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Acetone                            | ND     | 10  |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 2-Butanone                         | ND     | 10  |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Carbon disulfide                   | ND     | 10  |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C29

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-003A

**Client Sample ID:** MW-35  
**Collection Date:** 8/18/2016 11:40:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|--------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: BCN |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Isopropylbenzene                   | 4.7    | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 4-Isopropyltoluene                 | 1.1    | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| n-Butylbenzene                     | 0.35   | 3.0    | J    | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| n-Propylbenzene                    | 4.1    | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| sec-Butylbenzene                   | 3.6    | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| tert-Butylbenzene                  | 1.9    | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Surr: 1,2-Dichloroethane-d4        | 103    | 70-130 |      | %Rec  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Surr: 4-Bromofluorobenzene         | 95.1   | 70-130 |      | %Rec  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Surr: Dibromofluoromethane         | 95.3   | 70-130 |      | %Rec  | 1  | 8/24/2016 4:44:00 PM | R36743       |
| Surr: Toluene-d8                   | 102    | 70-130 |      | %Rec  | 1  | 8/24/2016 4:44:00 PM | R36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 16 of 75                                   |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-003B

**Client Sample ID:** MW-35  
**Collection Date:** 8/18/2016 11:40:00 AM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-----------------------------------------|--------|----------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                       | Analyst: NSB |
| Gasoline Range Organics (GRO)           | 0.52   | 0.050    |      | mg/L  | 1  | 8/26/2016 11:55:36 AM | R36808       |
| Surr: BFB                               | 173    | 66.4-120 | S    | %Rec  | 1  | 8/26/2016 11:55:36 AM | R36808       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-003C

**Client Sample ID:** MW-35  
**Collection Date:** 8/18/2016 11:40:00 AM  
**Matrix:** Aqueous

| <b>Analyses</b>                       | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|---------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |               |            |             |              |           |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | 0.62          | 0.20       |             | mg/L         | 1         | 8/23/2016 6:55:08 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND            | 2.5        |             | mg/L         | 1         | 8/23/2016 6:55:08 PM | 27114               |
| Surr: DNOP                            | 117           | 67.9-149   |             | %Rec         | 1         | 8/23/2016 6:55:08 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-003D

**Client Sample ID:** MW-35  
**Collection Date:** 8/18/2016 11:40:00 AM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed        | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 850    | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 7:03:43 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                      | Analyst: <b>MRA</b> |
| Fluoride                                        | 0.47   | 0.10  |      | mg/L                   | 1  | 8/27/2016 1:40:07 AM | R36827              |
| Chloride                                        | 240    | 10    |      | mg/L                   | 20 | 9/1/2016 5:18:16 PM  | R36952              |
| Bromide                                         | 2.2    | 0.10  |      | mg/L                   | 1  | 9/1/2016 5:05:52 PM  | R36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND     | 0.50  | H    | mg/L                   | 1  | 8/27/2016 1:40:07 AM | R36827              |
| Sulfate                                         | 14     | 0.50  |      | mg/L                   | 1  | 9/1/2016 5:05:52 PM  | R36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 5:19:02 PM | R36847              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 905.4  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 7:03:43 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 7:03:43 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 905.4  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 7:03:43 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-003E

**Client Sample ID:** MW-35  
**Collection Date:** 8/18/2016 11:40:00 AM  
**Matrix:** Aqueous

| Analyses                                   | Result  | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID            |
|--------------------------------------------|---------|---------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |         |         |      |       |    |                       | Analyst: <b>pmf</b> |
| Mercury                                    | 0.00010 | 0.00020 | J    | mg/L  | 1  | 8/24/2016 10:46:20 AM | 27127               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |         |         |      |       |    |                       | Analyst: <b>MED</b> |
| Arsenic                                    | 0.047   | 0.020   |      | mg/L  | 1  | 8/25/2016 1:55:23 PM  | 27124               |
| Barium                                     | 1.3     | 0.10    |      | mg/L  | 5  | 8/25/2016 2:02:45 PM  | 27124               |
| Cadmium                                    | ND      | 0.0020  |      | mg/L  | 1  | 8/25/2016 1:55:23 PM  | 27124               |
| Chromium                                   | 0.0033  | 0.0060  | J    | mg/L  | 1  | 8/25/2016 1:55:23 PM  | 27124               |
| Lead                                       | 0.0098  | 0.0050  |      | mg/L  | 1  | 8/25/2016 1:55:23 PM  | 27124               |
| Selenium                                   | ND      | 0.050   |      | mg/L  | 1  | 8/25/2016 1:55:23 PM  | 27124               |
| Silver                                     | ND      | 0.0050  |      | mg/L  | 1  | 8/25/2016 1:55:23 PM  | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-003F

**Client Sample ID:** MW-35  
**Collection Date:** 8/18/2016 11:40:00 AM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                       | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 8/24/2016 10:48:23 AM | 27127        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                       | Analyst: MED |
| Arsenic                                   | 0.038  | 0.020   |      | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |
| Barium                                    | 0.82   | 0.020   |      | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |
| Calcium                                   | 120    | 5.0     |      | mg/L  | 5  | 9/7/2016 5:48:56 PM   | A37036       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |
| Iron                                      | 3.4    | 0.10    |      | mg/L  | 5  | 9/7/2016 5:48:56 PM   | A37036       |
| Lead                                      | 0.0044 | 0.0050  | J    | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |
| Magnesium                                 | 21     | 1.0     |      | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |
| Manganese                                 | 2.5    | 0.010   |      | mg/L  | 5  | 9/7/2016 5:48:56 PM   | A37036       |
| Potassium                                 | 2.8    | 1.0     |      | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |
| Sodium                                    | 380    | 5.0     |      | mg/L  | 5  | 9/7/2016 5:48:56 PM   | A37036       |
| Uranium                                   | 0.0095 | 0.10    | J    | mg/L  | 1  | 9/12/2016 12:10:56 PM | A37126       |
| Zinc                                      | 0.011  | 0.020   | J    | mg/L  | 1  | 9/7/2016 5:47:17 PM   | A37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-004A

**Client Sample ID:** MW-38  
**Collection Date:** 8/18/2016 12:25:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                      | Analyst: BCN |
| Benzene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Methyl tert-butyl ether (MTBE)     | 0.26   | 1.0 | J    | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Naphthalene                        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Acetone                            | ND     | 10  |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 2-Butanone                         | ND     | 10  |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Carbon disulfide                   | ND     | 10  |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 22 of 75                                   |

**Analytical Report**Lab Order: **1608C29****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-004A

**Client Sample ID:** MW-38  
**Collection Date:** 8/18/2016 12:25:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID            |
|------------------------------------|--------|--------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: <b>BCN</b> |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| sec-Butylbenzene                   | 0.15   | 1.0    | J    | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| tert-Butylbenzene                  | 0.55   | 1.0    | J    | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Surr: 1,2-Dichloroethane-d4        | 104    | 70-130 |      | %Rec  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Surr: 4-Bromofluorobenzene         | 98.8   | 70-130 |      | %Rec  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Surr: Dibromofluoromethane         | 98.1   | 70-130 |      | %Rec  | 1  | 8/24/2016 5:07:00 PM | R36743              |
| Surr: Toluene-d8                   | 99.1   | 70-130 |      | %Rec  | 1  | 8/24/2016 5:07:00 PM | R36743              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-004B

**Client Sample ID:** MW-38  
**Collection Date:** 8/18/2016 12:25:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed         | Batch ID            |
|-----------------------------------------|--------|----------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                       | Analyst: <b>NSB</b> |
| Gasoline Range Organics (GRO)           | 0.043  | 0.050    | J    | mg/L  | 1  | 8/26/2016 12:20:03 PM | R36808              |
| Surr: BFB                               | 93.0   | 66.4-120 |      | %Rec  | 1  | 8/26/2016 12:20:03 PM | R36808              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-004C

**Client Sample ID:** MW-38  
**Collection Date:** 8/18/2016 12:25:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | 0.28   | 0.20     |      | mg/L  | 1  | 8/23/2016 7:16:43 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 7:16:43 PM | 27114               |
| Surr: DNOP                            | 109    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 7:16:43 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



**Analytical Report**Lab Order: **1608C29****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-004D

**Client Sample ID:** MW-38  
**Collection Date:** 8/18/2016 12:25:00 PM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed        | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 450    | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 7:36:22 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                      | Analyst: <b>MRA</b> |
| Fluoride                                        | 0.64   | 0.10  |      | mg/L                   | 1  | 8/27/2016 2:04:56 AM | R36827              |
| Chloride                                        | 75     | 10    |      | mg/L                   | 20 | 9/1/2016 5:43:05 PM  | R36952              |
| Bromide                                         | 0.98   | 0.10  |      | mg/L                   | 1  | 9/1/2016 5:30:40 PM  | R36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND     | 0.50  | H    | mg/L                   | 1  | 8/27/2016 2:04:56 AM | R36827              |
| Sulfate                                         | 4.6    | 0.50  |      | mg/L                   | 1  | 9/1/2016 5:30:40 PM  | R36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 5:31:27 PM | R36847              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 497.4  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 7:36:22 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 7:36:22 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 497.4  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 7:36:22 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-004E

**Client Sample ID:** MW-38  
**Collection Date:** 8/18/2016 12:25:00 PM  
**Matrix:** Aqueous

| <b>Analyses</b>                            | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b>  | <b>Batch ID</b>     |
|--------------------------------------------|---------------|------------|-------------|--------------|-----------|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |               |            |             |              |           |                       | Analyst: <b>pmf</b> |
| Mercury                                    | ND            | 0.00020    |             | mg/L         | 1         | 8/24/2016 10:50:27 AM | 27127               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |               |            |             |              |           |                       | Analyst: <b>MED</b> |
| Arsenic                                    | ND            | 0.020      |             | mg/L         | 1         | 8/25/2016 2:04:27 PM  | 27124               |
| Barium                                     | 0.60          | 0.020      |             | mg/L         | 1         | 8/25/2016 2:04:27 PM  | 27124               |
| Cadmium                                    | ND            | 0.0020     |             | mg/L         | 1         | 8/25/2016 2:04:27 PM  | 27124               |
| Chromium                                   | 0.0033        | 0.0060     | J           | mg/L         | 1         | 8/25/2016 2:04:27 PM  | 27124               |
| Lead                                       | 0.0093        | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:04:27 PM  | 27124               |
| Selenium                                   | ND            | 0.050      |             | mg/L         | 1         | 8/25/2016 2:04:27 PM  | 27124               |
| Silver                                     | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:04:27 PM  | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-004F

**Client Sample ID:** MW-38  
**Collection Date:** 8/18/2016 12:25:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                       | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 8/24/2016 10:52:32 AM | 27127        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                       | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Barium                                    | 0.55   | 0.020   |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Calcium                                   | 98     | 1.0     |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Chromium                                  | 0.0042 | 0.0060  | J    | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Copper                                    | 0.033  | 0.0060  |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Iron                                      | 13     | 1.0     |      | mg/L  | 50 | 9/12/2016 12:13:52 PM | A37126       |
| Lead                                      | 0.014  | 0.0050  |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Magnesium                                 | 16     | 1.0     |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Manganese                                 | 3.0    | 0.010   |      | mg/L  | 5  | 9/7/2016 5:58:15 PM   | A37036       |
| Potassium                                 | 2.8    | 1.0     |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |
| Sodium                                    | 180    | 5.0     |      | mg/L  | 5  | 9/7/2016 5:58:15 PM   | A37036       |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 12:12:23 PM | A37126       |
| Zinc                                      | 0.053  | 0.020   |      | mg/L  | 1  | 9/7/2016 5:50:50 PM   | A37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-004G

**Client Sample ID:** MW-38  
**Collection Date:** 8/18/2016 12:25:00 PM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL | Qual | Units | DF | Date Analyzed         | Batch ID     |
|----------------------------------------|--------|-----|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |     |      |       |    |                       | Analyst: DAM |
| Acenaphthene                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Acenaphthylene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Aniline                                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Anthracene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Azobenzene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Benz(a)anthracene                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Benzo(a)pyrene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Benzo(b)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Benzo(g,h,i)perylene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Benzo(k)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Benzoic acid                           | 8.9    | 20  | J    | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Benzyl alcohol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Bis(2-chloroethoxy)methane             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Bis(2-chloroethyl)ether                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Bis(2-chloroisopropyl)ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Bis(2-ethylhexyl)phthalate             | 3.9    | 10  | J    | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 4-Bromophenyl phenyl ether             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Butyl benzyl phthalate                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Carbazole                              | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 4-Chloro-3-methylphenol                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 4-Chloroaniline                        | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 2-Chloronaphthalene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 2-Chlorophenol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 4-Chlorophenyl phenyl ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Chrysene                               | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Di-n-butyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Di-n-octyl phthalate                   | 5.8    | 10  | J    | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Dibenz(a,h)anthracene                  | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Dibenzofuran                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 1,2-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 1,3-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 1,4-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 3,3'-Dichlorobenzidine                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Diethyl phthalate                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| Dimethyl phthalate                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 2,4-Dichlorophenol                     | ND     | 20  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 2,4-Dimethylphenol                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 4,6-Dinitro-2-methylphenol             | ND     | 20  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 2,4-Dinitrophenol                      | ND     | 20  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 2,4-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |
| 2,6-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-004G

**Client Sample ID:** MW-38  
**Collection Date:** 8/18/2016 12:25:00 PM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL      | Qual | Units | DF | Date Analyzed         | Batch ID            |
|----------------------------------------|--------|----------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |          |      |       |    |                       | Analyst: <b>DAM</b> |
| Fluoranthene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Fluorene                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Hexachlorobenzene                      | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Hexachlorobutadiene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Hexachlorocyclopentadiene              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Hexachloroethane                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Indeno(1,2,3-cd)pyrene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Isophorone                             | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 1-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 2-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 2-Methylphenol                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 3+4-Methylphenol                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| N-Nitrosodi-n-propylamine              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| N-Nitrosodimethylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| N-Nitrosodiphenylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Naphthalene                            | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 2-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 3-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 4-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Nitrobenzene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 2-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 4-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Pentachlorophenol                      | ND     | 20       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Phenanthrene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Phenol                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Pyrene                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Pyridine                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 1,2,4-Trichlorobenzene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 2,4,5-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| 2,4,6-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Surr: 2-Fluorophenol                   | 40.7   | 15-123   |      | %Rec  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Surr: Phenol-d5                        | 31.6   | 4.13-124 |      | %Rec  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Surr: 2,4,6-Tribromophenol             | 79.7   | 18.4-134 |      | %Rec  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Surr: Nitrobenzene-d5                  | 63.0   | 28.8-134 |      | %Rec  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Surr: 2-Fluorobiphenyl                 | 58.6   | 35.9-125 |      | %Rec  | 1  | 8/29/2016 12:01:09 PM | 27151               |
| Surr: 4-Terphenyl-d14                  | 54.8   | 15-146   |      | %Rec  | 1  | 8/29/2016 12:01:09 PM | 27151               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-005A

**Client Sample ID:** MW-12  
**Collection Date:** 8/18/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                      | Analyst: BCN |
| Benzene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Naphthalene                        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Acetone                            | ND     | 10  |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 2-Butanone                         | ND     | 10  |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Carbon disulfide                   | ND     | 10  |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C29

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-005A

**Client Sample ID:** MW-12  
**Collection Date:** 8/18/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|--------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: BCN |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Surr: 1,2-Dichloroethane-d4        | 104    | 70-130 |      | %Rec  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Surr: 4-Bromofluorobenzene         | 99.6   | 70-130 |      | %Rec  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Surr: Dibromofluoromethane         | 97.4   | 70-130 |      | %Rec  | 1  | 8/24/2016 5:31:00 PM | R36743       |
| Surr: Toluene-d8                   | 99.4   | 70-130 |      | %Rec  | 1  | 8/24/2016 5:31:00 PM | R36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 32 of 75                                   |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-005B

**Client Sample ID:** MW-12  
**Collection Date:** 8/18/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|-----------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                      | Analyst: <b>NSB</b> |
| Gasoline Range Organics (GRO)           | ND     | 0.050    |      | mg/L  | 1  | 8/26/2016 1:33:14 PM | R36808              |
| Surr: BFB                               | 86.8   | 66.4-120 |      | %Rec  | 1  | 8/26/2016 1:33:14 PM | R36808              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-005C

**Client Sample ID:** MW-12  
**Collection Date:** 8/18/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/23/2016 7:38:14 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 7:38:14 PM | 27114               |
| Surr: DNOP                            | 104    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 7:38:14 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-005D

**Client Sample ID:** MW-12  
**Collection Date:** 8/18/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed        | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 130    | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 7:55:50 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                      | Analyst: <b>MRA</b> |
| Fluoride                                        | 0.45   | 0.10  |      | mg/L                   | 1  | 8/27/2016 2:29:45 AM | R36827              |
| Chloride                                        | 4.7    | 0.50  |      | mg/L                   | 1  | 9/1/2016 5:55:29 PM  | R36952              |
| Bromide                                         | ND     | 0.10  |      | mg/L                   | 1  | 9/1/2016 5:55:29 PM  | R36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | 0.35   | 0.50  | JH   | mg/L                   | 1  | 8/27/2016 2:29:45 AM | R36827              |
| Sulfate                                         | 48     | 10    |      | mg/L                   | 20 | 9/1/2016 6:07:53 PM  | R36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 5:43:51 PM | R36847              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 149.0  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 7:55:50 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 7:55:50 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 149.0  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 7:55:50 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-005E

**Client Sample ID:** MW-12  
**Collection Date:** 8/18/2016 2:10:00 PM  
**Matrix:** Aqueous

| <b>Analyses</b>                            | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b>  | <b>Batch ID</b>     |
|--------------------------------------------|---------------|------------|-------------|--------------|-----------|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |               |            |             |              |           |                       | Analyst: <b>pmf</b> |
| Mercury                                    | 0.00014       | 0.00020    | J           | mg/L         | 1         | 8/24/2016 10:54:38 AM | 27127               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |               |            |             |              |           |                       | Analyst: <b>MED</b> |
| Arsenic                                    | ND            | 0.020      |             | mg/L         | 1         | 8/25/2016 2:08:08 PM  | 27124               |
| Barium                                     | 0.36          | 0.020      |             | mg/L         | 1         | 8/25/2016 2:08:08 PM  | 27124               |
| Cadmium                                    | ND            | 0.0020     |             | mg/L         | 1         | 8/25/2016 2:08:08 PM  | 27124               |
| Chromium                                   | 0.058         | 0.0060     |             | mg/L         | 1         | 8/25/2016 2:08:08 PM  | 27124               |
| Lead                                       | 0.019         | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:08:08 PM  | 27124               |
| Selenium                                   | ND            | 0.050      |             | mg/L         | 1         | 8/25/2016 2:08:08 PM  | 27124               |
| Silver                                     | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:08:08 PM  | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 36 of 75                                   |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-005F

**Client Sample ID:** MW-12  
**Collection Date:** 8/18/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result   | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------------|----------|---------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |          |         |      |       |    |                       | Analyst: pmf |
| Mercury                                   | 0.000071 | 0.00020 | J    | mg/L  | 1  | 8/24/2016 10:56:43 AM | 27127        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |          |         |      |       |    |                       | Analyst: MED |
| Arsenic                                   | ND       | 0.020   |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Barium                                    | 0.27     | 0.020   |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Cadmium                                   | ND       | 0.0020  |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Calcium                                   | 58       | 1.0     |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Chromium                                  | 0.089    | 0.0060  |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Copper                                    | 0.023    | 0.0060  |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Iron                                      | 9.2      | 0.20    |      | mg/L  | 10 | 9/12/2016 12:16:53 PM | A37126       |
| Lead                                      | 0.032    | 0.0050  |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Magnesium                                 | 11       | 1.0     |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Manganese                                 | 2.1      | 0.010   |      | mg/L  | 5  | 9/7/2016 6:01:40 PM   | A37036       |
| Potassium                                 | 1.6      | 1.0     |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Selenium                                  | ND       | 0.050   |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Silver                                    | ND       | 0.0050  |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Sodium                                    | 32       | 1.0     |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |
| Uranium                                   | ND       | 0.10    |      | mg/L  | 1  | 9/12/2016 12:15:32 PM | A37126       |
| Zinc                                      | 0.10     | 0.020   |      | mg/L  | 1  | 9/7/2016 5:59:57 PM   | A37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-005G

**Client Sample ID:** MW-12  
**Collection Date:** 8/18/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|----------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |     |      |       |    |                      | Analyst: DAM |
| Acenaphthene                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Acenaphthylene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Aniline                                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Anthracene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Azobenzene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Benz(a)anthracene                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Benzo(a)pyrene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Benzo(b)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Benzo(g,h,i)perylene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Benzo(k)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Benzoic acid                           | 5.6    | 20  | J    | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Benzyl alcohol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Bis(2-chloroethoxy)methane             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Bis(2-chloroethyl)ether                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Bis(2-chloroisopropyl)ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Bis(2-ethylhexyl)phthalate             | 3.6    | 10  | J    | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 4-Bromophenyl phenyl ether             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Butyl benzyl phthalate                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Carbazole                              | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 4-Chloro-3-methylphenol                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 4-Chloroaniline                        | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2-Chloronaphthalene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2-Chlorophenol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 4-Chlorophenyl phenyl ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Chrysene                               | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Di-n-butyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Di-n-octyl phthalate                   | 5.3    | 10  | J    | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Dibenz(a,h)anthracene                  | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Dibenzofuran                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 1,2-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 1,3-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 1,4-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 3,3'-Dichlorobenzidine                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Diethyl phthalate                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Dimethyl phthalate                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2,4-Dichlorophenol                     | ND     | 20  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2,4-Dimethylphenol                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 4,6-Dinitro-2-methylphenol             | ND     | 20  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2,4-Dinitrophenol                      | ND     | 20  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2,4-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2,6-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 38 of 75                                   |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-005G

**Client Sample ID:** MW-12  
**Collection Date:** 8/18/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID     |
|----------------------------------------|--------|----------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |          |      |       |    |                      | Analyst: DAM |
| Fluoranthene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Fluorene                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Hexachlorobenzene                      | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Hexachlorobutadiene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Hexachlorocyclopentadiene              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Hexachloroethane                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Indeno(1,2,3-cd)pyrene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Isophorone                             | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 1-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2-Methylphenol                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 3+4-Methylphenol                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| N-Nitrosodi-n-propylamine              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| N-Nitrosodimethylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| N-Nitrosodiphenylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Naphthalene                            | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 3-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 4-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Nitrobenzene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 4-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Pentachlorophenol                      | ND     | 20       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Phenanthrene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Phenol                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Pyrene                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Pyridine                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 1,2,4-Trichlorobenzene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2,4,5-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| 2,4,6-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Surr: 2-Fluorophenol                   | 3.81   | 15-123   | S    | %Rec  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Surr: Phenol-d5                        | 12.9   | 4.13-124 |      | %Rec  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Surr: 2,4,6-Tribromophenol             | 7.73   | 18.4-134 | S    | %Rec  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Surr: Nitrobenzene-d5                  | 74.1   | 28.8-134 |      | %Rec  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Surr: 2-Fluorobiphenyl                 | 62.1   | 35.9-125 |      | %Rec  | 1  | 8/29/2016 1:24:23 PM | 27151        |
| Surr: 4-Terphenyl-d14                  | 62.9   | 15-146   |      | %Rec  | 1  | 8/29/2016 1:24:23 PM | 27151        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 39 of 75                                   |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-006A

**Client Sample ID:** MW-11  
**Collection Date:** 8/18/2016 1:15:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                      | Analyst: BCN |
| Benzene                            | 9.9    | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Ethylbenzene                       | 0.42   | 1.0 | J    | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Methyl tert-butyl ether (MTBE)     | 2.5    | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,2,4-Trimethylbenzene             | 120    | 10  |      | µg/L  | 10 | 8/25/2016 9:43:00 AM | R36736       |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,2-Dichloroethane (EDC)           | 0.26   | 1.0 | J    | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Naphthalene                        | 70     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1-Methylnaphthalene                | 17     | 4.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 2-Methylnaphthalene                | 23     | 4.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Acetone                            | 19     | 10  |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 2-Butanone                         | 4.4    | 10  | J    | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Carbon disulfide                   | 0.84   | 10  | J    | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-006A

**Client Sample ID:** MW-11  
**Collection Date:** 8/18/2016 1:15:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID            |
|------------------------------------|--------|--------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: <b>BCN</b> |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Isopropylbenzene                   | 59     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| 4-Isopropyltoluene                 | 3.5    | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| n-Butylbenzene                     | 2.2    | 3.0    | J    | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| n-Propylbenzene                    | 64     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| sec-Butylbenzene                   | 12     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| tert-Butylbenzene                  | 2.4    | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Xylenes, Total                     | 0.73   | 1.5    | J    | µg/L  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Surr: 1,2-Dichloroethane-d4        | 100    | 70-130 |      | %Rec  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Surr: 4-Bromofluorobenzene         | 91.5   | 70-130 |      | %Rec  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Surr: Dibromofluoromethane         | 95.9   | 70-130 |      | %Rec  | 1  | 8/24/2016 5:55:00 PM | R36743              |
| Surr: Toluene-d8                   | 124    | 70-130 |      | %Rec  | 1  | 8/24/2016 5:55:00 PM | R36743              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 41 of 75                                   |



**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-006B

**Client Sample ID:** MW-11  
**Collection Date:** 8/18/2016 1:15:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|-----------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                      | Analyst: <b>NSB</b> |
| Gasoline Range Organics (GRO)           | 1.4    | 0.25     |      | mg/L  | 5  | 8/26/2016 3:10:54 PM | R36808              |
| Surr: BFB                               | 205    | 66.4-120 | S    | %Rec  | 5  | 8/26/2016 3:10:54 PM | R36808              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-006C

**Client Sample ID:** MW-11  
**Collection Date:** 8/18/2016 1:15:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | 1.8    | 0.20     |      | mg/L  | 1  | 8/23/2016 7:59:56 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 7:59:56 PM | 27114               |
| Surr: DNOP                            | 119    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 7:59:56 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-006D

**Client Sample ID:** MW-11  
**Collection Date:** 8/18/2016 1:15:00 PM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed        | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 1000   | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 8:05:29 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                      | Analyst: <b>LGT</b> |
| Fluoride                                        | 0.41   | 0.10  |      | mg/L                   | 1  | 9/1/2016 6:20:18 PM  | R36952              |
| Chloride                                        | 120    | 10    |      | mg/L                   | 20 | 9/1/2016 6:32:42 PM  | R36952              |
| Bromide                                         | 0.92   | 0.10  |      | mg/L                   | 1  | 9/1/2016 6:20:18 PM  | R36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | 2.8    | 2.5   | H    | mg/L                   | 5  | 8/27/2016 3:19:23 AM | R36827              |
| Sulfate                                         | 7.6    | 0.50  |      | mg/L                   | 1  | 9/1/2016 6:20:18 PM  | R36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 5:56:15 PM | R36847              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 1082   | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 8:05:29 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 8:05:29 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 1082   | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 8:05:29 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C29

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-006E

**Client Sample ID:** MW-11  
**Collection Date:** 8/18/2016 1:15:00 PM  
**Matrix:** Aqueous

| Analyses                                   | Result   | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID            |
|--------------------------------------------|----------|---------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |          |         |      |       |    |                       | Analyst: <b>pmf</b> |
| Mercury                                    | 0.000077 | 0.00020 | J    | mg/L  | 1  | 8/24/2016 10:58:49 AM | 27127               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |          |         |      |       |    |                       | Analyst: <b>MED</b> |
| Arsenic                                    | 0.047    | 0.020   |      | mg/L  | 1  | 8/25/2016 2:11:54 PM  | 27124               |
| Barium                                     | 0.96     | 0.020   |      | mg/L  | 1  | 8/25/2016 2:11:54 PM  | 27124               |
| Cadmium                                    | ND       | 0.0020  |      | mg/L  | 1  | 8/25/2016 2:11:54 PM  | 27124               |
| Chromium                                   | 0.0035   | 0.0060  | J    | mg/L  | 1  | 8/25/2016 2:11:54 PM  | 27124               |
| Lead                                       | 0.028    | 0.0050  |      | mg/L  | 1  | 8/25/2016 2:11:54 PM  | 27124               |
| Selenium                                   | ND       | 0.050   |      | mg/L  | 1  | 8/25/2016 2:11:54 PM  | 27124               |
| Silver                                     | ND       | 0.0050  |      | mg/L  | 1  | 8/25/2016 2:11:54 PM  | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 45 of 75                                   |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-006F

**Client Sample ID:** MW-11  
**Collection Date:** 8/18/2016 1:15:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result   | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------------|----------|---------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |          |         |      |       |    |                       | Analyst: pmf |
| Mercury                                   | 0.000056 | 0.00020 | J    | mg/L  | 1  | 8/24/2016 11:05:14 AM | 27127        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |          |         |      |       |    |                       | Analyst: MED |
| Arsenic                                   | 0.033    | 0.020   |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Barium                                    | 0.86     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Cadmium                                   | ND       | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Calcium                                   | 87       | 1.0     |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Chromium                                  | ND       | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Copper                                    | 0.015    | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Iron                                      | 18       | 1.0     |      | mg/L  | 50 | 9/12/2016 12:19:43 PM | A37126       |
| Lead                                      | 0.027    | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Magnesium                                 | 21       | 1.0     |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Manganese                                 | 1.8      | 0.010   |      | mg/L  | 5  | 9/7/2016 6:05:07 PM   | A37036       |
| Potassium                                 | 2.8      | 1.0     |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Selenium                                  | ND       | 0.050   |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Silver                                    | ND       | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |
| Sodium                                    | 410      | 5.0     |      | mg/L  | 5  | 9/7/2016 6:05:07 PM   | A37036       |
| Uranium                                   | 0.017    | 0.10    | J    | mg/L  | 1  | 9/12/2016 12:18:14 PM | A37126       |
| Zinc                                      | 0.063    | 0.020   |      | mg/L  | 1  | 9/7/2016 6:03:32 PM   | A37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-006G

**Client Sample ID:** MW-11  
**Collection Date:** 8/18/2016 1:15:00 PM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|----------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |     |      |       |    |                      | Analyst: DAM |
| Acenaphthene                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Acenaphthylene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Aniline                                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Anthracene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Azobenzene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Benz(a)anthracene                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Benzo(a)pyrene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Benzo(b)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Benzo(g,h,i)perylene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Benzo(k)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Benzoic acid                           | 13     | 20  | J    | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Benzyl alcohol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Bis(2-chloroethoxy)methane             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Bis(2-chloroethyl)ether                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Bis(2-chloroisopropyl)ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Bis(2-ethylhexyl)phthalate             | 4.7    | 10  | J    | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 4-Bromophenyl phenyl ether             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Butyl benzyl phthalate                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Carbazole                              | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 4-Chloro-3-methylphenol                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 4-Chloroaniline                        | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2-Chloronaphthalene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2-Chlorophenol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 4-Chlorophenyl phenyl ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Chrysene                               | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Di-n-butyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Di-n-octyl phthalate                   | 5.1    | 10  | J    | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Dibenz(a,h)anthracene                  | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Dibenzofuran                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 1,2-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 1,3-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 1,4-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 3,3'-Dichlorobenzidine                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Diethyl phthalate                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Dimethyl phthalate                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2,4-Dichlorophenol                     | ND     | 20  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2,4-Dimethylphenol                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 4,6-Dinitro-2-methylphenol             | ND     | 20  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2,4-Dinitrophenol                      | ND     | 20  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2,4-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2,6-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-006G

**Client Sample ID:** MW-11  
**Collection Date:** 8/18/2016 1:15:00 PM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID     |
|----------------------------------------|--------|----------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |          |      |       |    |                      | Analyst: DAM |
| Fluoranthene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Fluorene                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Hexachlorobenzene                      | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Hexachlorobutadiene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Hexachlorocyclopentadiene              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Hexachloroethane                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Indeno(1,2,3-cd)pyrene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Isophorone                             | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 1-Methylnaphthalene                    | 25     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2-Methylnaphthalene                    | 11     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2-Methylphenol                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 3+4-Methylphenol                       | 17     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| N-Nitrosodi-n-propylamine              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| N-Nitrosodimethylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| N-Nitrosodiphenylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Naphthalene                            | 43     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 3-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 4-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Nitrobenzene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 4-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Pentachlorophenol                      | ND     | 20       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Phenanthrene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Phenol                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Pyrene                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Pyridine                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 1,2,4-Trichlorobenzene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2,4,5-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| 2,4,6-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Surr: 2-Fluorophenol                   | 6.19   | 15-123   | S    | %Rec  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Surr: Phenol-d5                        | 18.9   | 4.13-124 |      | %Rec  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Surr: 2,4,6-Tribromophenol             | 14.6   | 18.4-134 | S    | %Rec  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Surr: Nitrobenzene-d5                  | 62.6   | 28.8-134 |      | %Rec  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Surr: 2-Fluorobiphenyl                 | 45.7   | 35.9-125 |      | %Rec  | 1  | 8/29/2016 1:52:02 PM | 27151        |
| Surr: 4-Terphenyl-d14                  | 47.9   | 15-146   |      | %Rec  | 1  | 8/29/2016 1:52:02 PM | 27151        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 48 of 75                                   |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-007A

**Client Sample ID:** MW-11-DUP  
**Collection Date:** 8/18/2016 1:25:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed         | Batch ID     |
|------------------------------------|--------|-----|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                       | Analyst: BCN |
| Benzene                            | 9.4    | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Ethylbenzene                       | 0.37   | 1.0 | J    | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Methyl tert-butyl ether (MTBE)     | 2.6    | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,2,4-Trimethylbenzene             | 120    | 10  |      | µg/L  | 10 | 8/25/2016 10:07:00 AM | R36736       |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Naphthalene                        | 69     | 2.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1-Methylnaphthalene                | 17     | 4.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 2-Methylnaphthalene                | 22     | 4.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Acetone                            | 17     | 10  |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 2-Butanone                         | 4.4    | 10  | J    | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Carbon disulfide                   | ND     | 10  |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 6:18:00 PM  | R36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



# Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-007A

**Client Sample ID:** MW-11-DUP  
**Collection Date:** 8/18/2016 1:25:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID            |
|------------------------------------|--------|--------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: <b>BCN</b> |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Isopropylbenzene                   | 54     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| 4-Isopropyltoluene                 | 3.3    | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| n-Butylbenzene                     | 2.1    | 3.0    | J    | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| n-Propylbenzene                    | 59     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| sec-Butylbenzene                   | 11     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| tert-Butylbenzene                  | 2.3    | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Xylenes, Total                     | 0.67   | 1.5    | J    | µg/L  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Surr: 1,2-Dichloroethane-d4        | 103    | 70-130 |      | %Rec  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Surr: 4-Bromofluorobenzene         | 92.1   | 70-130 |      | %Rec  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Surr: Dibromofluoromethane         | 97.1   | 70-130 |      | %Rec  | 1  | 8/24/2016 6:18:00 PM | R36743              |
| Surr: Toluene-d8                   | 118    | 70-130 |      | %Rec  | 1  | 8/24/2016 6:18:00 PM | R36743              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 50 of 75                                   |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-007B

**Client Sample ID:** MW-11-DUP  
**Collection Date:** 8/18/2016 1:25:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|-----------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                      | Analyst: <b>NSB</b> |
| Gasoline Range Organics (GRO)           | 1.4    | 0.25     |      | mg/L  | 5  | 8/26/2016 3:35:20 PM | R36808              |
| Surr: BFB                               | 216    | 66.4-120 | S    | %Rec  | 5  | 8/26/2016 3:35:20 PM | R36808              |

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|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-007C

**Client Sample ID:** MW-11-DUP  
**Collection Date:** 8/18/2016 1:25:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID     |
|---------------------------------------|--------|----------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: TOM |
| Diesel Range Organics (DRO)           | 1.7    | 0.20     |      | mg/L  | 1  | 8/23/2016 8:21:26 PM | 27114        |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 8:21:26 PM | 27114        |
| Surr: DNOP                            | 117    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 8:21:26 PM | 27114        |

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|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-007D

**Client Sample ID:** MW-11-DUP  
**Collection Date:** 8/18/2016 1:25:00 PM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed        | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 1000   | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 8:42:58 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                      | Analyst: <b>LGT</b> |
| Fluoride                                        | 0.39   | 0.10  |      | mg/L                   | 1  | 9/1/2016 6:45:07 PM  | R36952              |
| Chloride                                        | 150    | 10    |      | mg/L                   | 20 | 9/1/2016 6:57:32 PM  | R36952              |
| Bromide                                         | 1.2    | 0.10  |      | mg/L                   | 1  | 9/1/2016 6:45:07 PM  | R36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | 2.8    | 2.5   | H    | mg/L                   | 5  | 8/27/2016 3:44:12 AM | R36827              |
| Sulfate                                         | 12     | 0.50  |      | mg/L                   | 1  | 9/1/2016 6:45:07 PM  | R36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 6:08:40 PM | R36847              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 1054   | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 8:42:58 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 8:42:58 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 1054   | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 8:42:58 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-007E

**Client Sample ID:** MW-11-DUP  
**Collection Date:** 8/18/2016 1:25:00 PM  
**Matrix:** Aqueous

| Analyses                                   | Result   | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID            |
|--------------------------------------------|----------|---------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |          |         |      |       |    |                       | Analyst: <b>pmf</b> |
| Mercury                                    | 0.000074 | 0.00020 | J    | mg/L  | 1  | 8/24/2016 11:07:13 AM | 27127               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |          |         |      |       |    |                       | Analyst: <b>MED</b> |
| Arsenic                                    | 0.038    | 0.020   |      | mg/L  | 1  | 8/25/2016 2:15:13 PM  | 27124               |
| Barium                                     | 0.99     | 0.020   |      | mg/L  | 1  | 8/25/2016 2:15:13 PM  | 27124               |
| Cadmium                                    | 0.00085  | 0.0020  | J    | mg/L  | 1  | 8/25/2016 2:15:13 PM  | 27124               |
| Chromium                                   | 0.0074   | 0.0060  |      | mg/L  | 1  | 8/25/2016 2:15:13 PM  | 27124               |
| Lead                                       | 0.035    | 0.0050  |      | mg/L  | 1  | 8/25/2016 2:15:13 PM  | 27124               |
| Selenium                                   | ND       | 0.050   |      | mg/L  | 1  | 8/25/2016 2:15:13 PM  | 27124               |
| Silver                                     | ND       | 0.0050  |      | mg/L  | 1  | 8/25/2016 2:15:13 PM  | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C29

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-007F

**Client Sample ID:** MW-11-DUP  
**Collection Date:** 8/18/2016 1:25:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result   | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------------|----------|---------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |          |         |      |       |    |                       | Analyst: pmf |
| Mercury                                   | 0.000070 | 0.00020 | J    | mg/L  | 1  | 8/24/2016 11:09:13 AM | 27127        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |          |         |      |       |    |                       | Analyst: MED |
| Arsenic                                   | 0.036    | 0.020   |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Barium                                    | 0.99     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Cadmium                                   | ND       | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Calcium                                   | 98       | 1.0     |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Chromium                                  | ND       | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Copper                                    | 0.035    | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Iron                                      | 23       | 1.0     |      | mg/L  | 50 | 9/12/2016 12:22:53 PM | A37126       |
| Lead                                      | 0.043    | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Magnesium                                 | 23       | 1.0     |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Manganese                                 | 2.2      | 0.010   |      | mg/L  | 5  | 9/7/2016 6:08:29 PM   | A37036       |
| Potassium                                 | 2.4      | 1.0     |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Selenium                                  | ND       | 0.050   |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Silver                                    | ND       | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |
| Sodium                                    | 450      | 5.0     |      | mg/L  | 5  | 9/7/2016 6:08:29 PM   | A37036       |
| Uranium                                   | ND       | 0.10    |      | mg/L  | 1  | 9/12/2016 12:21:23 PM | A37126       |
| Zinc                                      | 0.067    | 0.020   |      | mg/L  | 1  | 9/7/2016 6:06:51 PM   | A37036       |

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|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-007G

**Client Sample ID:** MW-11-DUP  
**Collection Date:** 8/18/2016 1:25:00 PM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|----------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |     |      |       |    |                      | Analyst: DAM |
| Acenaphthene                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Acenaphthylene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Aniline                                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Anthracene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Azobenzene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Benz(a)anthracene                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Benzo(a)pyrene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Benzo(b)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Benzo(g,h,i)perylene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Benzo(k)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Benzoic acid                           | 11     | 20  | J    | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Benzyl alcohol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Bis(2-chloroethoxy)methane             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Bis(2-chloroethyl)ether                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Bis(2-chloroisopropyl)ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Bis(2-ethylhexyl)phthalate             | 4.1    | 10  | J    | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 4-Bromophenyl phenyl ether             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Butyl benzyl phthalate                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Carbazole                              | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 4-Chloro-3-methylphenol                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 4-Chloroaniline                        | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2-Chloronaphthalene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2-Chlorophenol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 4-Chlorophenyl phenyl ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Chrysene                               | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Di-n-butyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Di-n-octyl phthalate                   | 6.8    | 10  | J    | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Dibenz(a,h)anthracene                  | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Dibenzofuran                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 1,2-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 1,3-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 1,4-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 3,3'-Dichlorobenzidine                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Diethyl phthalate                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Dimethyl phthalate                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2,4-Dichlorophenol                     | ND     | 20  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2,4-Dimethylphenol                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 4,6-Dinitro-2-methylphenol             | ND     | 20  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2,4-Dinitrophenol                      | ND     | 20  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2,4-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2,6-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C29

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-007G

**Client Sample ID:** MW-11-DUP  
**Collection Date:** 8/18/2016 1:25:00 PM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID     |
|----------------------------------------|--------|----------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |          |      |       |    |                      | Analyst: DAM |
| Fluoranthene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Fluorene                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Hexachlorobenzene                      | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Hexachlorobutadiene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Hexachlorocyclopentadiene              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Hexachloroethane                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Indeno(1,2,3-cd)pyrene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Isophorone                             | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 1-Methylnaphthalene                    | 19     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2-Methylnaphthalene                    | 4.4    | 10       | J    | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2-Methylphenol                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 3+4-Methylphenol                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| N-Nitrosodi-n-propylamine              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| N-Nitrosodimethylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| N-Nitrosodiphenylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Naphthalene                            | 28     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 3-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 4-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Nitrobenzene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 4-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Pentachlorophenol                      | ND     | 20       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Phenanthrene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Phenol                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Pyrene                                 | 3.6    | 10       | J    | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Pyridine                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 1,2,4-Trichlorobenzene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2,4,5-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| 2,4,6-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Surr: 2-Fluorophenol                   | 1.22   | 15-123   | S    | %Rec  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Surr: Phenol-d5                        | 2.39   | 4.13-124 | S    | %Rec  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Surr: 2,4,6-Tribromophenol             | 1.41   | 18.4-134 | S    | %Rec  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Surr: Nitrobenzene-d5                  | 51.5   | 28.8-134 |      | %Rec  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Surr: 2-Fluorobiphenyl                 | 41.9   | 35.9-125 |      | %Rec  | 1  | 8/29/2016 2:19:56 PM | 27151        |
| Surr: 4-Terphenyl-d14                  | 45.0   | 15-146   |      | %Rec  | 1  | 8/29/2016 2:19:56 PM | 27151        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



**Analytical Report**Lab Order: **1608C29**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down Gradient Wells 8-18-2016  
**Lab ID:** 1608C29-008A

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Matrix:** Trip Blank

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID            |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>BCN</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:42:00 PM | A36743              |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:42:00 PM | A36743              |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/24/2016 6:42:00 PM | A36743              |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/24/2016 6:42:00 PM | A36743              |
| Surr: 1,2-Dichloroethane-d4                  | 101    | 70-130 |      | %Rec  | 1  | 8/24/2016 6:42:00 PM | A36743              |
| Surr: 4-Bromofluorobenzene                   | 101    | 70-130 |      | %Rec  | 1  | 8/24/2016 6:42:00 PM | A36743              |
| Surr: Dibromofluoromethane                   | 98.3   | 70-130 |      | %Rec  | 1  | 8/24/2016 6:42:00 PM | A36743              |
| Surr: Toluene-d8                             | 99.2   | 70-130 |      | %Rec  | 1  | 8/24/2016 6:42:00 PM | A36743              |

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|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 58 of 75                                   |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                                  |                                 |      |                                           |             |                    |          |           |      |          |      |
|----------------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>              | SampType: <b>mblk</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b>            | Batch ID: <b>R36827</b>         |      | RunNo: <b>36827</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                       | Analysis Date: <b>8/26/2016</b> |      | SeqNo: <b>1141638</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                          | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                         | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Phosphorus, Orthophosphate (As P | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |

|                                  |                                 |      |                                           |             |                    |          |           |      |          |      |
|----------------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>             | SampType: <b>lcs</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b>           | Batch ID: <b>R36827</b>         |      | RunNo: <b>36827</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                       | Analysis Date: <b>8/26/2016</b> |      | SeqNo: <b>1141639</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                          | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                         | 0.46                            | 0.10 | 0.5000                                    | 0           | 92.8               | 90       | 110       |      |          |      |
| Phosphorus, Orthophosphate (As P | 4.6                             | 0.50 | 5.000                                     | 0           | 92.6               | 90       | 110       |      |          |      |

|                       |                                 |      |                                           |             |                    |          |           |      |          |      |
|-----------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>   | SampType: <b>MBLK</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b> | Batch ID: <b>R36847</b>         |      | RunNo: <b>36847</b>                       |             |                    |          |           |      |          |      |
| Prep Date:            | Analysis Date: <b>8/29/2016</b> |      | SeqNo: <b>1142224</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte               | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Nitrate+Nitrite as N  | ND                              | 0.20 |                                           |             |                    |          |           |      |          |      |

|                        |                                 |      |                                           |             |                    |          |           |      |          |      |
|------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>   | SampType: <b>LCS</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b> | Batch ID: <b>R36847</b>         |      | RunNo: <b>36847</b>                       |             |                    |          |           |      |          |      |
| Prep Date:             | Analysis Date: <b>8/29/2016</b> |      | SeqNo: <b>1142225</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Nitrate+Nitrite as N   | 3.5                             | 0.20 | 3.500                                     | 0           | 101                | 90       | 110       |      |          |      |

|                       |                                |      |                                           |             |                    |          |           |      |          |      |
|-----------------------|--------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>   | SampType: <b>MBLK</b>          |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b> | Batch ID: <b>R36952</b>        |      | RunNo: <b>36952</b>                       |             |                    |          |           |      |          |      |
| Prep Date:            | Analysis Date: <b>9/1/2016</b> |      | SeqNo: <b>1145073</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte               | Result                         | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride              | ND                             | 0.10 |                                           |             |                    |          |           |      |          |      |
| Chloride              | ND                             | 0.50 |                                           |             |                    |          |           |      |          |      |
| Bromide               | ND                             | 0.10 |                                           |             |                    |          |           |      |          |      |
| Sulfate               | ND                             | 0.50 |                                           |             |                    |          |           |      |          |      |

|                        |                                |     |                                           |             |                    |          |           |      |          |      |
|------------------------|--------------------------------|-----|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>   | SampType: <b>LCS</b>           |     | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b> | Batch ID: <b>R36952</b>        |     | RunNo: <b>36952</b>                       |             |                    |          |           |      |          |      |
| Prep Date:             | Analysis Date: <b>9/1/2016</b> |     | SeqNo: <b>1145074</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                | Result                         | PQL | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|            |        |                |           |             |                          |          |           |      |          |      |
|------------|--------|----------------|-----------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID  | LCS    | SampType:      | LCS       | TestCode:   | EPA Method 300.0: Anions |          |           |      |          |      |
| Client ID: | LCSW   | Batch ID:      | R36952    | RunNo:      | 36952                    |          |           |      |          |      |
| Prep Date: |        | Analysis Date: | 9/1/2016  | SeqNo:      | 1145074                  | Units:   | mg/L      |      |          |      |
| Analyte    | Result | PQL            | SPK value | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride   | 0.53   | 0.10           | 0.5000    | 0           | 107                      | 90       | 110       |      |          |      |
| Chloride   | 4.9    | 0.50           | 5.000     | 0           | 97.7                     | 90       | 110       |      |          |      |
| Bromide    | 2.5    | 0.10           | 2.500     | 0           | 99.2                     | 90       | 110       |      |          |      |
| Sulfate    | 10     | 0.50           | 10.00     | 0           | 101                      | 90       | 110       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                             |           |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-27114 |      | SampType: LCS            |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |      | Batch ID: 27114          |             | RunNo: 36683                             |          |             |      |          |      |
| Prep Date:                  | 8/23/2016 |      | Analysis Date: 8/23/2016 |             | SeqNo: 1136777                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 2.8       | 0.20 | 2.500                    | 0           | 112                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.26      |      | 0.2500                   |             | 102                                      | 67.9     | 149         |      |          |      |

|                                |           |      |                          |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-27114  |      | SampType: MBLK           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       |      | Batch ID: 27114          |             | RunNo: 36683                             |          |             |      |          |      |
| Prep Date:                     | 8/23/2016 |      | Analysis Date: 8/23/2016 |             | SeqNo: 1136780                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20 |                          |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5  |                          |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.49      |      | 0.5000                   |             | 97.5                                     | 67.9     | 149         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                               |        |       |                          |             |                                            |          |             |      |          |      |
|-------------------------------|--------|-------|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 5ML RB |       | SampType: MBLK           |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | PBW    |       | Batch ID: R36808         |             | RunNo: 36808                               |          |             |      |          |      |
| Prep Date:                    |        |       | Analysis Date: 8/26/2016 |             | SeqNo: 1140791                             |          | 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                     | 16     |       | 20.00                    |             | 82.4                                       | 66.4     | 120         |      |          |      |

|                               |               |       |                          |             |                                            |          |             |      |          |      |
|-------------------------------|---------------|-------|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 2.5UG GRO LCS |       | SampType: LCS            |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | LCSW          |       | Batch ID: R36808         |             | RunNo: 36808                               |          |             |      |          |      |
| Prep Date:                    |               |       | Analysis Date: 8/26/2016 |             | SeqNo: 1140792                             |          | Units: mg/L |      |          |      |
| Analyte                       | Result        | PQL   | SPK value                | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.51          | 0.050 | 0.5000                   | 0           | 102                                        | 80       | 120         |      |          |      |
| Surr: BFB                     | 19            |       | 20.00                    |             | 94.6                                       | 66.4     | 120         |      |          |      |

|                               |                |       |                |             |      |           |                                  |        |          |      |  |
|-------------------------------|----------------|-------|----------------|-------------|------|-----------|----------------------------------|--------|----------|------|--|
| Sample ID                     | 1608C29-004BMS |       | SampType:      | MS          |      | TestCode: | EPA Method 8015D: Gasoline Range |        |          |      |  |
| Client ID:                    | MW-38          |       | Batch ID:      | R36808      |      | RunNo:    | 36808                            |        |          |      |  |
| Prep Date:                    |                |       | Analysis Date: | 8/26/2016   |      | SeqNo:    | 1140802                          | Units: | mg/L     |      |  |
| Analyte                       | Result         | PQL   | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                        | %RPD   | RPDLimit | Qual |  |
| Gasoline Range Organics (GRO) | 0.53           | 0.050 | 0.5000         | 0.04260     | 97.0 | 70        | 130                              |        |          |      |  |
| Surr: BFB                     | 20             |       | 20.00          |             | 102  | 66.4      | 120                              |        |          |      |  |

|                               |                 |       |                          |             |                                            |          |             |      |          |      |
|-------------------------------|-----------------|-------|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 1608C29-004BMSD |       | SampType: MSD            |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | MW-38           |       | Batch ID: R36808         |             | RunNo: 36808                               |          |             |      |          |      |
| Prep Date:                    |                 |       | Analysis Date: 8/26/2016 |             | SeqNo: 1140803                             |          | Units: mg/L |      |          |      |
| Analyte                       | Result          | PQL   | SPK value                | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.52            | 0.050 | 0.5000                   | 0.04260     | 95.3                                       | 70       | 130         | 1.57 | 20       |      |
| Surr: BFB                     | 18              |       | 20.00                    |             | 92.3                                       | 66.4     | 120         | 0    | 0        |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                             |           |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|-----------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 100ng lcs | SampType:      | LCS       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | LCSW      | Batch ID:      | A36743    | RunNo:      | 36743                                 |          |           |      |          |      |
| Prep Date:                  |           | Analysis Date: | 8/24/2016 | SeqNo:      | 1138955                               | Units:   | µg/L      |      |          |      |
| Analyte                     | Result    | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 19        | 1.0            | 20.00     | 0           | 95.1                                  | 70       | 130       |      |          |      |
| Toluene                     | 20        | 1.0            | 20.00     | 0           | 100                                   | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10        |                | 10.00     |             | 101                                   | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10        |                | 10.00     |             | 101                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.6       |                | 10.00     |             | 95.7                                  | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 9.9       |                | 10.00     |             | 98.5                                  | 70       | 130       |      |          |      |

|                             |        |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|--------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | rb     | SampType:      | MBLK      | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | PBW    | Batch ID:      | A36743    | RunNo:      | 36743                                 |          |           |      |          |      |
| Prep Date:                  |        | Analysis Date: | 8/24/2016 | SeqNo:      | 1138956                               | Units:   | µg/L      |      |          |      |
| Analyte                     | Result | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Toluene                     | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Ethylbenzene                | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Xylenes, Total              | ND     | 1.5            |           |             |                                       |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.7    |                | 10.00     |             | 97.3                                  | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10     |                | 10.00     |             | 101                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.6    |                | 10.00     |             | 95.5                                  | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 10     |                | 10.00     |             | 99.6                                  | 70       | 130       |      |          |      |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                             |           |                          |           |             |                                       |          |             |      |          |      |
|-----------------------------|-----------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs | SampType: LCS            |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | LCSW      | Batch ID: R36743         |           |             | RunNo: 36743                          |          |             |      |          |      |
| Prep Date:                  |           | Analysis Date: 8/24/2016 |           |             | SeqNo: 1138860                        |          | Units: µg/L |      |          |      |
| Analyte                     | Result    | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 19        | 1.0                      | 20.00     | 0           | 95.1                                  | 70       | 130         |      |          |      |
| Toluene                     | 20        | 1.0                      | 20.00     | 0           | 100                                   | 70       | 130         |      |          |      |
| Chlorobenzene               | 20        | 1.0                      | 20.00     | 0           | 101                                   | 70       | 130         |      |          |      |
| 1,1-Dichloroethene          | 19        | 1.0                      | 20.00     | 0           | 94.2                                  | 70       | 130         |      |          |      |
| Trichloroethene (TCE)       | 19        | 1.0                      | 20.00     | 0           | 92.6                                  | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10        |                          | 10.00     |             | 101                                   | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10        |                          | 10.00     |             | 101                                   | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.6       |                          | 10.00     |             | 95.7                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.9       |                          | 10.00     |             | 98.5                                  | 70       | 130         |      |          |      |

|                                |        |                          |           |             |                                       |          |             |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | rb     | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: R36743         |           |             | RunNo: 36743                          |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 8/24/2016 |           |             | SeqNo: 1138861                        |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,3,5-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Naphthalene                    | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| 1-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |          |             |      |          |      |
| 2-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |          |             |      |          |      |
| Acetone                        | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Bromobenzene                   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromodichloromethane           | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromoform                      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromomethane                   | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| 2-Butanone                     | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Carbon disulfide               | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Carbon Tetrachloride           | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chlorobenzene                  | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chloroethane                   | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| Chloroform                     | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chloromethane                  | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| 2-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                             |        |                |           |             |                             |          |           |      |          |      |
|-----------------------------|--------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID                   | rb     | SampType:      | MBLK      | TestCode:   | EPA Method 8260B: VOLATILES |          |           |      |          |      |
| Client ID:                  | PBW    | Batch ID:      | R36743    | RunNo:      | 36743                       |          |           |      |          |      |
| Prep Date:                  |        | Analysis Date: | 8/24/2016 | SeqNo:      | 1138861                     | Units:   | µg/L      |      |          |      |
| Analyte                     | Result | PQL            | SPK value | SPK Ref Val | %REC                        | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 4-Chlorotoluene             | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| cis-1,2-DCE                 | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| cis-1,3-Dichloropropene     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dibromo-3-chloropropane | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| Dibromochloromethane        | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Dibromomethane              | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,3-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,4-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Dichlorodifluoromethane     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloroethane          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloroethene          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dichloropropane         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,3-Dichloropropane         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 2,2-Dichloropropane         | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloropropene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Hexachlorobutadiene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 2-Hexanone                  | ND     | 10             |           |             |                             |          |           |      |          |      |
| Isopropylbenzene            | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 4-Isopropyltoluene          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 4-Methyl-2-pentanone        | 1.1    | 10             |           |             |                             |          |           |      |          | J    |
| Methylene Chloride          | ND     | 3.0            |           |             |                             |          |           |      |          |      |
| n-Butylbenzene              | ND     | 3.0            |           |             |                             |          |           |      |          |      |
| n-Propylbenzene             | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| sec-Butylbenzene            | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Styrene                     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| tert-Butylbenzene           | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,2,2-Tetrachloroethane   | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| Tetrachloroethene (PCE)     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| trans-1,2-DCE               | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| trans-1,3-Dichloropropene   | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2,3-Trichlorobenzene      | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2,4-Trichlorobenzene      | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,1-Trichloroethane       | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,2-Trichloroethane       | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Trichloroethene (TCE)       | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Trichlorofluoromethane      | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2,3-Trichloropropane      | ND     | 2.0            |           |             |                             |          |           |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                             |        |                          |           |             |                                       |          |             |      |          |      |
|-----------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | rb     | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | PBW    | Batch ID: R36743         |           |             | RunNo: 36743                          |          |             |      |          |      |
| Prep Date:                  |        | Analysis Date: 8/24/2016 |           |             | SeqNo: 1138861                        |          | Units: µg/L |      |          |      |
| Analyte                     | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Vinyl chloride              | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Xylenes, Total              | ND     | 1.5                      |           |             |                                       |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.7    |                          | 10.00     |             | 97.3                                  | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10     |                          | 10.00     |             | 101                                   | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.6    |                          | 10.00     |             | 95.5                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 10     |                          | 10.00     |             | 99.6                                  | 70       | 130         |      |          |      |

|                             |           |                          |           |             |                                       |          |             |      |          |      |
|-----------------------------|-----------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs | SampType: LCS            |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | LCSW      | Batch ID: R36736         |           |             | RunNo: 36736                          |          |             |      |          |      |
| Prep Date:                  |           | Analysis Date: 8/25/2016 |           |             | SeqNo: 1139716                        |          | Units: %Rec |      |          |      |
| Analyte                     | Result    | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: 1,2-Dichloroethane-d4 | 10        |                          | 10.00     |             | 101                                   | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.9       |                          | 10.00     |             | 98.8                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.7       |                          | 10.00     |             | 97.2                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 10        |                          | 10.00     |             | 100                                   | 70       | 130         |      |          |      |

|                             |        |                          |           |             |                                       |          |             |      |          |      |
|-----------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | rb     | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | PBW    | Batch ID: R36736         |           |             | RunNo: 36736                          |          |             |      |          |      |
| Prep Date:                  |        | Analysis Date: 8/25/2016 |           |             | SeqNo: 1139717                        |          | Units: µg/L |      |          |      |
| Analyte                     | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| 1,2,4-Trimethylbenzene      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10     |                          | 10.00     |             | 101                                   | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10     |                          | 10.00     |             | 103                                   | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.7    |                          | 10.00     |             | 96.8                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.8    |                          | 10.00     |             | 97.7                                  | 70       | 130         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                             |           |                |           |             |                                 |          |           |      |          |      |
|-----------------------------|-----------|----------------|-----------|-------------|---------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | mb-27151  | SampType:      | MBLK      | TestCode:   | EPA Method 8270C: Semivolatiles |          |           |      |          |      |
| Client ID:                  | PBW       | Batch ID:      | 27151     | RunNo:      | 36825                           |          |           |      |          |      |
| Prep Date:                  | 8/24/2016 | Analysis Date: | 8/29/2016 | SeqNo:      | 1141546                         | Units:   | µg/L      |      |          |      |
| Analyte                     | Result    | PQL            | SPK value | SPK Ref Val | %REC                            | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Acenaphthene                | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Acenaphthylene              | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Aniline                     | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Anthracene                  | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Azobenzene                  | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Benz(a)anthracene           | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Benzo(a)pyrene              | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Benzo(b)fluoranthene        | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Benzo(g,h,i)perylene        | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Benzo(k)fluoranthene        | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Benzoic acid                | 5.9       | 20             |           |             |                                 |          |           |      |          | J    |
| Benzyl alcohol              | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Bis(2-chloroethoxy)methane  | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Bis(2-chloroethyl)ether     | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Bis(2-chloroisopropyl)ether | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Bis(2-ethylhexyl)phthalate  | 3.8       | 10             |           |             |                                 |          |           |      |          | J    |
| 4-Bromophenyl phenyl ether  | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Butyl benzyl phthalate      | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Carbazole                   | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 4-Chloro-3-methylphenol     | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 4-Chloroaniline             | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 2-Chloronaphthalene         | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 2-Chlorophenol              | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 4-Chlorophenyl phenyl ether | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Chrysene                    | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Di-n-butyl phthalate        | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Di-n-octyl phthalate        | 6.9       | 10             |           |             |                                 |          |           |      |          | J    |
| Dibenz(a,h)anthracene       | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Dibenzofuran                | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 1,2-Dichlorobenzene         | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 1,3-Dichlorobenzene         | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 1,4-Dichlorobenzene         | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 3,3'-Dichlorobenzidine      | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Diethyl phthalate           | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Dimethyl phthalate          | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 2,4-Dichlorophenol          | ND        | 20             |           |             |                                 |          |           |      |          |      |
| 2,4-Dimethylphenol          | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 4,6-Dinitro-2-methylphenol  | ND        | 20             |           |             |                                 |          |           |      |          |      |
| 2,4-Dinitrophenol           | ND        | 20             |           |             |                                 |          |           |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                            |           |                |           |             |                                 |          |           |      |          |      |
|----------------------------|-----------|----------------|-----------|-------------|---------------------------------|----------|-----------|------|----------|------|
| Sample ID                  | mb-27151  | SampType:      | MBLK      | TestCode:   | EPA Method 8270C: Semivolatiles |          |           |      |          |      |
| Client ID:                 | PBW       | Batch ID:      | 27151     | RunNo:      | 36825                           |          |           |      |          |      |
| Prep Date:                 | 8/24/2016 | Analysis Date: | 8/29/2016 | SeqNo:      | 1141546                         | Units:   | µg/L      |      |          |      |
| Analyte                    | Result    | PQL            | SPK value | SPK Ref Val | %REC                            | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 2,4-Dinitrotoluene         | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 2,6-Dinitrotoluene         | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Fluoranthene               | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Fluorene                   | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Hexachlorobenzene          | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Hexachlorobutadiene        | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Hexachlorocyclopentadiene  | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Hexachloroethane           | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Indeno(1,2,3-cd)pyrene     | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Isophorone                 | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 1-Methylnaphthalene        | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 2-Methylnaphthalene        | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 2-Methylphenol             | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 3+4-Methylphenol           | ND        | 10             |           |             |                                 |          |           |      |          |      |
| N-Nitrosodi-n-propylamine  | ND        | 10             |           |             |                                 |          |           |      |          |      |
| N-Nitrosodimethylamine     | ND        | 10             |           |             |                                 |          |           |      |          |      |
| N-Nitrosodiphenylamine     | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Naphthalene                | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 2-Nitroaniline             | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 3-Nitroaniline             | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 4-Nitroaniline             | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Nitrobenzene               | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 2-Nitrophenol              | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 4-Nitrophenol              | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Pentachlorophenol          | ND        | 20             |           |             |                                 |          |           |      |          |      |
| Phenanthrene               | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Phenol                     | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Pyrene                     | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Pyridine                   | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 1,2,4-Trichlorobenzene     | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 2,4,5-Trichlorophenol      | ND        | 10             |           |             |                                 |          |           |      |          |      |
| 2,4,6-Trichlorophenol      | ND        | 10             |           |             |                                 |          |           |      |          |      |
| Surr: 2-Fluorophenol       | 100       |                | 200.0     |             | 50.6                            | 15       | 123       |      |          |      |
| Surr: Phenol-d5            | 80        |                | 200.0     |             | 40.2                            | 4.13     | 124       |      |          |      |
| Surr: 2,4,6-Tribromophenol | 180       |                | 200.0     |             | 87.8                            | 18.4     | 134       |      |          |      |
| Surr: Nitrobenzene-d5      | 74        |                | 100.0     |             | 74.2                            | 28.8     | 134       |      |          |      |
| Surr: 2-Fluorobiphenyl     | 67        |                | 100.0     |             | 67.2                            | 35.9     | 125       |      |          |      |
| Surr: 4-Terphenyl-d14      | 69        |                | 100.0     |             | 69.1                            | 15       | 146       |      |          |      |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                            |           |     |                          |             |                                           |          |             |      |          |      |
|----------------------------|-----------|-----|--------------------------|-------------|-------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                  | lcs-27151 |     | SampType: LCS            |             | TestCode: EPA Method 8270C: Semivolatiles |          |             |      |          |      |
| Client ID:                 | LCSW      |     | Batch ID: 27151          |             | RunNo: 36825                              |          |             |      |          |      |
| Prep Date:                 | 8/24/2016 |     | Analysis Date: 8/29/2016 |             | SeqNo: 1141547                            |          | Units: µg/L |      |          |      |
| Analyte                    | Result    | PQL | SPK value                | SPK Ref Val | %REC                                      | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Acenaphthene               | 67        | 10  | 100.0                    | 0           | 66.6                                      | 35       | 113         |      |          |      |
| 4-Chloro-3-methylphenol    | 150       | 10  | 200.0                    | 0           | 73.7                                      | 40.7     | 114         |      |          |      |
| 2-Chlorophenol             | 140       | 10  | 200.0                    | 0           | 68.7                                      | 37.6     | 113         |      |          |      |
| 1,4-Dichlorobenzene        | 58        | 10  | 100.0                    | 0           | 58.5                                      | 37.7     | 106         |      |          |      |
| 2,4-Dinitrotoluene         | 75        | 10  | 100.0                    | 0           | 74.7                                      | 37       | 91          |      |          |      |
| N-Nitrosodi-n-propylamine  | 58        | 10  | 100.0                    | 0           | 58.0                                      | 45.4     | 105         |      |          |      |
| 4-Nitrophenol              | 87        | 10  | 200.0                    | 0           | 43.6                                      | 33.4     | 104         |      |          |      |
| Pentachlorophenol          | 160       | 20  | 200.0                    | 0           | 82.5                                      | 29.5     | 94.9        |      |          |      |
| Phenol                     | 81        | 10  | 200.0                    | 0           | 40.5                                      | 30.6     | 119         |      |          |      |
| Pyrene                     | 83        | 10  | 100.0                    | 0           | 83.3                                      | 26.2     | 120         |      |          |      |
| 1,2,4-Trichlorobenzene     | 72        | 10  | 100.0                    | 0           | 72.5                                      | 39.9     | 125         |      |          |      |
| Surr: 2-Fluorophenol       | 84        |     | 200.0                    |             | 41.8                                      | 15       | 123         |      |          |      |
| Surr: Phenol-d5            | 75        |     | 200.0                    |             | 37.7                                      | 4.13     | 124         |      |          |      |
| Surr: 2,4,6-Tribromophenol | 170       |     | 200.0                    |             | 84.1                                      | 18.4     | 134         |      |          |      |
| Surr: Nitrobenzene-d5      | 59        |     | 100.0                    |             | 59.1                                      | 28.8     | 134         |      |          |      |
| Surr: 2-Fluorobiphenyl     | 60        |     | 100.0                    |             | 59.9                                      | 35.9     | 125         |      |          |      |
| Surr: 4-Terphenyl-d14      | 48        |     | 100.0                    |             | 48.0                                      | 15       | 146         |      |          |      |

|                            |                |                          |           |             |                                           |          |             |      |          |      |
|----------------------------|----------------|--------------------------|-----------|-------------|-------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                  | 1608c29-004gms | SampType: MS             |           |             | TestCode: EPA Method 8270C: Semivolatiles |          |             |      |          |      |
| Client ID:                 | MW-38          | Batch ID: 27151          |           |             | RunNo: 36825                              |          |             |      |          |      |
| Prep Date:                 | 8/24/2016      | Analysis Date: 8/29/2016 |           |             | SeqNo: 1141969                            |          | Units: µg/L |      |          |      |
| Analyte                    | Result         | PQL                      | SPK value | SPK Ref Val | %REC                                      | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Acenaphthene               | 53             | 10                       | 100.0     | 0           | 52.8                                      | 27.6     | 123         |      |          |      |
| 4-Chloro-3-methylphenol    | 76             | 10                       | 200.0     | 0           | 38.0                                      | 29.3     | 126         |      |          |      |
| 2-Chlorophenol             | 74             | 10                       | 200.0     | 0           | 37.2                                      | 15       | 133         |      |          |      |
| 1,4-Dichlorobenzene        | 37             | 10                       | 100.0     | 0           | 37.4                                      | 17.6     | 127         |      |          |      |
| 2,4-Dinitrotoluene         | 57             | 10                       | 100.0     | 0           | 57.2                                      | 38.9     | 98.5        |      |          |      |
| N-Nitrosodi-n-propylamine  | 56             | 10                       | 100.0     | 0           | 55.9                                      | 25.9     | 131         |      |          |      |
| 4-Nitrophenol              | 48             | 10                       | 200.0     | 0           | 23.8                                      | 15       | 102         |      |          |      |
| Pentachlorophenol          | 110            | 20                       | 200.0     | 0           | 53.2                                      | 15       | 120         |      |          |      |
| Phenol                     | 26             | 10                       | 200.0     | 0           | 12.9                                      | 15       | 100         |      |          | S    |
| Pyrene                     | 58             | 10                       | 100.0     | 0           | 58.4                                      | 22.8     | 126         |      |          |      |
| 1,2,4-Trichlorobenzene     | 47             | 10                       | 100.0     | 0           | 47.4                                      | 15       | 143         |      |          |      |
| Surr: 2-Fluorophenol       | 33             |                          | 200.0     |             | 16.5                                      | 15       | 123         |      |          |      |
| Surr: Phenol-d5            | 28             |                          | 200.0     |             | 14.0                                      | 4.13     | 124         |      |          |      |
| Surr: 2,4,6-Tribromophenol | 110            |                          | 200.0     |             | 56.9                                      | 18.4     | 134         |      |          |      |
| Surr: Nitrobenzene-d5      | 59             |                          | 100.0     |             | 58.6                                      | 28.8     | 134         |      |          |      |
| Surr: 2-Fluorobiphenyl     | 51             |                          | 100.0     |             | 51.2                                      | 35.9     | 125         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                       |                |                |           |             |                                 |          |           |      |          |      |
|-----------------------|----------------|----------------|-----------|-------------|---------------------------------|----------|-----------|------|----------|------|
| Sample ID             | 1608c29-004gms | SampType:      | MS        | TestCode:   | EPA Method 8270C: Semivolatiles |          |           |      |          |      |
| Client ID:            | MW-38          | Batch ID:      | 27151     | RunNo:      | 36825                           |          |           |      |          |      |
| Prep Date:            | 8/24/2016      | Analysis Date: | 8/29/2016 | SeqNo:      | 1141969                         | Units:   | µg/L      |      |          |      |
| Analyte               | Result         | PQL            | SPK value | SPK Ref Val | %REC                            | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Terphenyl-d14 | 41             |                | 100.0     |             | 40.7                            | 15       | 146       |      |          |      |

|                            |                 |                |           |             |                                 |          |           |       |          |      |
|----------------------------|-----------------|----------------|-----------|-------------|---------------------------------|----------|-----------|-------|----------|------|
| Sample ID                  | 1608c29-004gmsd | SampType:      | MSD       | TestCode:   | EPA Method 8270C: Semivolatiles |          |           |       |          |      |
| Client ID:                 | MW-38           | Batch ID:      | 27151     | RunNo:      | 36825                           |          |           |       |          |      |
| Prep Date:                 | 8/24/2016       | Analysis Date: | 8/29/2016 | SeqNo:      | 1141970                         | Units:   | µg/L      |       |          |      |
| Analyte                    | Result          | PQL            | SPK value | SPK Ref Val | %REC                            | LowLimit | HighLimit | %RPD  | RPDLimit | Qual |
| Acenaphthene               | 54              | 10             | 100.0     | 0           | 53.7                            | 27.6     | 123       | 1.65  | 31.3     |      |
| 4-Chloro-3-methylphenol    | 95              | 10             | 200.0     | 0           | 47.5                            | 29.3     | 126       | 22.3  | 29       |      |
| 2-Chlorophenol             | 86              | 10             | 200.0     | 0           | 43.0                            | 15       | 133       | 14.2  | 28.4     |      |
| 1,4-Dichlorobenzene        | 37              | 10             | 100.0     | 0           | 36.8                            | 17.6     | 127       | 1.51  | 28.2     |      |
| 2,4-Dinitrotoluene         | 54              | 10             | 100.0     | 0           | 54.4                            | 38.9     | 98.5      | 5.05  | 22.9     |      |
| N-Nitrosodi-n-propylamine  | 48              | 10             | 100.0     | 0           | 48.4                            | 25.9     | 131       | 14.5  | 28.8     |      |
| 4-Nitrophenol              | 14              | 10             | 200.0     | 0           | 6.98                            | 15       | 102       | 109   | 41.5     | RS   |
| Pentachlorophenol          | 96              | 20             | 200.0     | 0           | 47.8                            | 15       | 120       | 10.7  | 45.1     |      |
| Phenol                     | 40              | 10             | 200.0     | 0           | 20.1                            | 15       | 100       | 43.6  | 33.9     | R    |
| Pyrene                     | 62              | 10             | 100.0     | 0           | 62.3                            | 22.8     | 126       | 6.47  | 33.6     |      |
| 1,2,4-Trichlorobenzene     | 47              | 10             | 100.0     | 0           | 47.0                            | 15       | 143       | 0.933 | 28.2     |      |
| Surr: 2-Fluorophenol       | 48              |                | 200.0     |             | 24.1                            | 15       | 123       | 0     | 0        |      |
| Surr: Phenol-d5            | 44              |                | 200.0     |             | 22.0                            | 4.13     | 124       | 0     | 0        |      |
| Surr: 2,4,6-Tribromophenol | 130             |                | 200.0     |             | 65.8                            | 18.4     | 134       | 0     | 0        |      |
| Surr: Nitrobenzene-d5      | 55              |                | 100.0     |             | 55.0                            | 28.8     | 134       | 0     | 0        |      |
| Surr: 2-Fluorobiphenyl     | 48              |                | 100.0     |             | 48.4                            | 35.9     | 125       | 0     | 0        |      |
| Surr: 4-Terphenyl-d14      | 43              |                | 100.0     |             | 42.7                            | 15       | 146       | 0     | 0        |      |

|                            |           |                |           |             |                                 |          |           |      |          |      |
|----------------------------|-----------|----------------|-----------|-------------|---------------------------------|----------|-----------|------|----------|------|
| Sample ID                  | mb-27255  | SampType:      | MBLK      | TestCode:   | EPA Method 8270C: Semivolatiles |          |           |      |          |      |
| Client ID:                 | PBW       | Batch ID:      | 27255     | RunNo:      | 36967                           |          |           |      |          |      |
| Prep Date:                 | 8/30/2016 | Analysis Date: | 9/2/2016  | SeqNo:      | 1145771                         | Units:   | %Rec      |      |          |      |
| Analyte                    | Result    | PQL            | SPK value | SPK Ref Val | %REC                            | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 2-Fluorophenol       | 60        |                | 200.0     |             | 30.0                            | 15       | 123       |      |          |      |
| Surr: Phenol-d5            | 57        |                | 200.0     |             | 28.7                            | 4.13     | 124       |      |          |      |
| Surr: 2,4,6-Tribromophenol | 92        |                | 200.0     |             | 46.0                            | 18.4     | 134       |      |          |      |
| Surr: Nitrobenzene-d5      | 64        |                | 100.0     |             | 63.5                            | 28.8     | 134       |      |          |      |
| Surr: 2-Fluorobiphenyl     | 59        |                | 100.0     |             | 58.6                            | 35.9     | 125       |      |          |      |
| Surr: 4-Terphenyl-d14      | 83        |                | 100.0     |             | 82.5                            | 15       | 146       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                            |           |     |                         |             |                                           |          |             |      |          |      |
|----------------------------|-----------|-----|-------------------------|-------------|-------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                  | lcs-27255 |     | SampType: LCS           |             | TestCode: EPA Method 8270C: Semivolatiles |          |             |      |          |      |
| Client ID:                 | LCSW      |     | Batch ID: 27255         |             | RunNo: 36967                              |          |             |      |          |      |
| Prep Date:                 | 8/30/2016 |     | Analysis Date: 9/2/2016 |             | SeqNo: 1145775                            |          | Units: %Rec |      |          |      |
| Analyte                    | Result    | PQL | SPK value               | SPK Ref Val | %REC                                      | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Surr: 2-Fluorophenol       | 84        |     | 200.0                   |             | 42.2                                      | 15       | 123         |      |          |      |
| Surr: Phenol-d5            | 71        |     | 200.0                   |             | 35.7                                      | 4.13     | 124         |      |          |      |
| Surr: 2,4,6-Tribromophenol | 170       |     | 200.0                   |             | 86.1                                      | 18.4     | 134         |      |          |      |
| Surr: Nitrobenzene-d5      | 69        |     | 100.0                   |             | 69.0                                      | 28.8     | 134         |      |          |      |
| Surr: 2-Fluorobiphenyl     | 59        |     | 100.0                   |             | 59.3                                      | 35.9     | 125         |      |          |      |
| Surr: 4-Terphenyl-d14      | 93        |     | 100.0                   |             | 93.3                                      | 15       | 146         |      |          |      |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|            |           |         |                |             |      |           |                          |      |          |      |  |
|------------|-----------|---------|----------------|-------------|------|-----------|--------------------------|------|----------|------|--|
| Sample ID  | MB-27127  |         | SampType:      | MBLK        |      | TestCode: | EPA Method 7470: Mercury |      |          |      |  |
| Client ID: | PBW       |         | Batch ID:      | 27127       |      | RunNo:    | 36730                    |      |          |      |  |
| Prep Date: | 8/23/2016 |         | Analysis Date: | 8/24/2016   |      | SeqNo:    | 1138256                  |      | Units:   | mg/L |  |
| Analyte    | Result    | PQL     | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                | %RPD | RPDLimit | Qual |  |
| Mercury    | ND        | 0.00020 |                |             |      |           |                          |      |          |      |  |

|            |           |         |                          |             |                                    |          |             |      |          |      |
|------------|-----------|---------|--------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-27127 |         | SampType: LCS            |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | LCSW      |         | Batch ID: 27127          |             | RunNo: 36730                       |          |             |      |          |      |
| Prep Date: | 8/23/2016 |         | Analysis Date: 8/24/2016 |             | SeqNo: 1138257                     |          | Units: mg/L |      |          |      |
| Analyte    | Result    | PQL     | SPK value                | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0051    | 0.00020 | 0.005000                 | 0           | 102                                | 80       | 120         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|            |             |        |                |                 |      |           |                                           |        |             |      |
|------------|-------------|--------|----------------|-----------------|------|-----------|-------------------------------------------|--------|-------------|------|
| Sample ID  | <b>MB-A</b> |        | SampType:      | <b>MBLK</b>     |      | TestCode: | <b>EPA Method 6010B: Dissolved Metals</b> |        |             |      |
| Client ID: | <b>PBW</b>  |        | Batch ID:      | <b>A37036</b>   |      | RunNo:    | <b>37036</b>                              |        |             |      |
| Prep Date: |             |        | Analysis Date: | <b>9/7/2016</b> |      | SeqNo:    | <b>1147837</b>                            | Units: | <b>mg/L</b> |      |
| Analyte    | Result      | PQL    | SPK value      | SPK Ref Val     | %REC | LowLimit  | HighLimit                                 | %RPD   | RPDLimit    | Qual |
| Arsenic    | ND          | 0.020  |                |                 |      |           |                                           |        |             |      |
| Barium     | ND          | 0.020  |                |                 |      |           |                                           |        |             |      |
| Cadmium    | ND          | 0.0020 |                |                 |      |           |                                           |        |             |      |
| Calcium    | ND          | 1.0    |                |                 |      |           |                                           |        |             |      |
| Chromium   | ND          | 0.0060 |                |                 |      |           |                                           |        |             |      |
| Copper     | ND          | 0.0060 |                |                 |      |           |                                           |        |             |      |
| Iron       | ND          | 0.020  |                |                 |      |           |                                           |        |             |      |
| Lead       | ND          | 0.0050 |                |                 |      |           |                                           |        |             |      |
| Magnesium  | ND          | 1.0    |                |                 |      |           |                                           |        |             |      |
| Manganese  | ND          | 0.0020 |                |                 |      |           |                                           |        |             |      |
| Potassium  | ND          | 1.0    |                |                 |      |           |                                           |        |             |      |
| Selenium   | ND          | 0.050  |                |                 |      |           |                                           |        |             |      |
| Silver     | 0.00039     | 0.0050 |                |                 |      |           |                                           |        |             | J    |
| Sodium     | ND          | 1.0    |                |                 |      |           |                                           |        |             |      |
| Zinc       | ND          | 0.020  |                |                 |      |           |                                           |        |             |      |

|            |             |       |                |                  |      |           |                                           |        |             |      |
|------------|-------------|-------|----------------|------------------|------|-----------|-------------------------------------------|--------|-------------|------|
| Sample ID  | <b>MB-A</b> |       | SampType:      | <b>MBLK</b>      |      | TestCode: | <b>EPA Method 6010B: Dissolved Metals</b> |        |             |      |
| Client ID: | <b>PBW</b>  |       | Batch ID:      | <b>A37126</b>    |      | RunNo:    | <b>37126</b>                              |        |             |      |
| Prep Date: |             |       | Analysis Date: | <b>9/12/2016</b> |      | SeqNo:    | <b>1151179</b>                            | Units: | <b>mg/L</b> |      |
| Analyte    | Result      | PQL   | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                 | %RPD   | RPDLimit    | Qual |
| Iron       | ND          | 0.020 |                |                  |      |           |                                           |        |             |      |
| Sodium     | ND          | 1.0   |                |                  |      |           |                                           |        |             |      |
| Uranium    | ND          | 0.10  |                |                  |      |           |                                           |        |             |      |

|            |              |       |                |                  |      |           |                                           |        |             |      |
|------------|--------------|-------|----------------|------------------|------|-----------|-------------------------------------------|--------|-------------|------|
| Sample ID  | <b>LCS-A</b> |       | SampType:      | <b>LCS</b>       |      | TestCode: | <b>EPA Method 6010B: Dissolved Metals</b> |        |             |      |
| Client ID: | <b>LCSW</b>  |       | Batch ID:      | <b>A37126</b>    |      | RunNo:    | <b>37126</b>                              |        |             |      |
| Prep Date: |              |       | Analysis Date: | <b>9/12/2016</b> |      | SeqNo:    | <b>1151180</b>                            | Units: | <b>mg/L</b> |      |
| Analyte    | Result       | PQL   | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                 | %RPD   | RPDLimit    | Qual |
| Iron       | 0.49         | 0.020 | 0.5000         | 0                | 98.3 | 80        | 120                                       |        |             |      |
| Sodium     | 49           | 1.0   | 50.00          | 0                | 98.9 | 80        | 120                                       |        |             |      |
| Uranium    | 0.50         | 0.10  | 0.5000         | 0                | 101  | 80        | 120                                       |        |             |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|            |                  |        |                |                  |      |           |                                            |        |             |      |
|------------|------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>MB-27124</b>  |        | SampType:      | <b>MBLK</b>      |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>PBW</b>       |        | Batch ID:      | <b>27124</b>     |      | RunNo:    | <b>36757</b>                               |        |             |      |
| Prep Date: | <b>8/23/2016</b> |        | Analysis Date: | <b>8/25/2016</b> |      | SeqNo:    | <b>1139271</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | ND               | 0.020  |                |                  |      |           |                                            |        |             |      |
| Barium     | ND               | 0.020  |                |                  |      |           |                                            |        |             |      |
| Cadmium    | 0.0010           | 0.0020 |                |                  |      |           |                                            |        |             | J    |
| Chromium   | ND               | 0.0060 |                |                  |      |           |                                            |        |             |      |
| Lead       | ND               | 0.0050 |                |                  |      |           |                                            |        |             |      |
| Selenium   | ND               | 0.050  |                |                  |      |           |                                            |        |             |      |
| Silver     | ND               | 0.0050 |                |                  |      |           |                                            |        |             |      |

|            |                  |        |                |                  |      |           |                                            |        |             |      |
|------------|------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>LCS-27124</b> |        | SampType:      | <b>LCS</b>       |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>LCSW</b>      |        | Batch ID:      | <b>27124</b>     |      | RunNo:    | <b>36757</b>                               |        |             |      |
| Prep Date: | <b>8/23/2016</b> |        | Analysis Date: | <b>8/25/2016</b> |      | SeqNo:    | <b>1139272</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | 0.50             | 0.020  | 0.5000         | 0                | 100  | 80        | 120                                        |        |             |      |
| Barium     | 0.48             | 0.020  | 0.5000         | 0                | 96.6 | 80        | 120                                        |        |             |      |
| Cadmium    | 0.49             | 0.0020 | 0.5000         | 0                | 97.7 | 80        | 120                                        |        |             |      |
| Chromium   | 0.48             | 0.0060 | 0.5000         | 0                | 96.6 | 80        | 120                                        |        |             |      |
| Lead       | 0.47             | 0.0050 | 0.5000         | 0                | 94.2 | 80        | 120                                        |        |             |      |
| Selenium   | 0.48             | 0.050  | 0.5000         | 0                | 95.2 | 80        | 120                                        |        |             |      |
| Silver     | 0.10             | 0.0050 | 0.1000         | 0                | 100  | 80        | 120                                        |        |             |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C29

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-18-2016

|                             |             |       |                |                  |      |           |                            |        |                   |      |
|-----------------------------|-------------|-------|----------------|------------------|------|-----------|----------------------------|--------|-------------------|------|
| Sample ID                   | <b>mb-1</b> |       | SampType:      | <b>mblk</b>      |      | TestCode: | <b>SM2320B: Alkalinity</b> |        |                   |      |
| Client ID:                  | <b>PBW</b>  |       | Batch ID:      | <b>R36738</b>    |      | RunNo:    | <b>36738</b>               |        |                   |      |
| Prep Date:                  |             |       | Analysis Date: | <b>8/24/2016</b> |      | SeqNo:    | <b>1138449</b>             | Units: | <b>mg/L CaCO3</b> |      |
| Analyte                     | Result      | PQL   | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                  | %RPD   | RPDLimit          | Qual |
| Total Alkalinity (as CaCO3) | 1.800       | 20.00 |                |                  |      |           |                            |        |                   | J    |

|                             |              |       |                |                  |      |           |                            |        |                   |      |
|-----------------------------|--------------|-------|----------------|------------------|------|-----------|----------------------------|--------|-------------------|------|
| Sample ID                   | <b>ics-1</b> |       | SampType:      | <b>ics</b>       |      | TestCode: | <b>SM2320B: Alkalinity</b> |        |                   |      |
| Client ID:                  | <b>LCSW</b>  |       | Batch ID:      | <b>R36738</b>    |      | RunNo:    | <b>36738</b>               |        |                   |      |
| Prep Date:                  |              |       | Analysis Date: | <b>8/24/2016</b> |      | SeqNo:    | <b>1138450</b>             | Units: | <b>mg/L CaCO3</b> |      |
| Analyte                     | Result       | PQL   | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                  | %RPD   | RPDLimit          | Qual |
| Total Alkalinity (as CaCO3) | 78.72        | 20.00 | 80.00          | 0                | 98.4 | 90        | 110                        |        |                   |      |

|                             |             |       |                |                  |      |           |                            |        |                   |      |
|-----------------------------|-------------|-------|----------------|------------------|------|-----------|----------------------------|--------|-------------------|------|
| Sample ID                   | <b>mb-2</b> |       | SampType:      | <b>mblk</b>      |      | TestCode: | <b>SM2320B: Alkalinity</b> |        |                   |      |
| Client ID:                  | <b>PBW</b>  |       | Batch ID:      | <b>R36738</b>    |      | RunNo:    | <b>36738</b>               |        |                   |      |
| Prep Date:                  |             |       | Analysis Date: | <b>8/24/2016</b> |      | SeqNo:    | <b>1138474</b>             | Units: | <b>mg/L CaCO3</b> |      |
| Analyte                     | Result      | PQL   | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                  | %RPD   | RPDLimit          | Qual |
| Total Alkalinity (as CaCO3) | 4.880       | 20.00 |                |                  |      |           |                            |        |                   | J    |

|                             |              |       |                |                  |      |           |                            |        |                   |      |
|-----------------------------|--------------|-------|----------------|------------------|------|-----------|----------------------------|--------|-------------------|------|
| Sample ID                   | <b>ics-2</b> |       | SampType:      | <b>ics</b>       |      | TestCode: | <b>SM2320B: Alkalinity</b> |        |                   |      |
| Client ID:                  | <b>LCSW</b>  |       | Batch ID:      | <b>R36738</b>    |      | RunNo:    | <b>36738</b>               |        |                   |      |
| Prep Date:                  |              |       | Analysis Date: | <b>8/24/2016</b> |      | SeqNo:    | <b>1138475</b>             | Units: | <b>mg/L CaCO3</b> |      |
| Analyte                     | Result       | PQL   | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                  | %RPD   | RPDLimit          | Qual |
| Total Alkalinity (as CaCO3) | 79.16        | 20.00 | 80.00          | 0                | 99.0 | 90        | 110                        |        |                   |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



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

## Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1608C29**

RcptNo: 1

Received by/date:

AG

08/19/16

Logged By: **Lindsay Mangin**

8/19/2016 7:30:00 AM

*Lindsay Mangin*

Completed By: **Lindsay Mangin**

8/22/2016 10:48:12 AM

*Lindsay Mangin*

Reviewed By:

JC 08/22/16

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: 21  
(2) or >12 unless noted
- Adjusted? NO
- Checked by: as

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 2.1     | Good      | Yes         |         |           |           |



[illegible]

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.









**Turn-Around Time:**

**X** Standard ☐ Rush

Project Name: Down Gradient Wells

Date: 8-18-2016

Project #: Annual

**PO#12615520**

Project Manager:

[illegible]

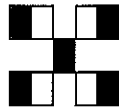
Sampler: Michael A Wicker

On Ice: ☒ Yes ☐ No

| Date             | Time    | Matrix           | Sample Request ID          | Container Type and # | Preservative Type              | HEAL No.        |
|------------------|---------|------------------|----------------------------|----------------------|--------------------------------|-----------------|
| 8-18-16          | 1315    | H <sub>2</sub> O | MW-11                      | 6-VOA                | HCl                            | -006<br>1688079 |
| ↓                | ↓       | ↓                | MW-11                      | 3-500 ml Amber       | Cool                           | -006            |
| ↓                | ↓       | ↓                | MW-11                      | 1-500 ml             | HNO <sub>3</sub>               | -006            |
| ↓                | ↓       | ↓                | MW-11 ( <u>No filter</u> ) | 1-125 ml             | HNO <sub>3</sub>               | -006            |
| ↓                | ↓       | ↓                | MW-11                      | 1-500 ml             | /                              | -006            |
| ↓                | ↓       | ↓                | MW-11                      | 1-125 ml             | H <sub>2</sub> SO <sub>4</sub> | -006            |
| ↓                | ↓       | ↓                | MW-11-DUP                  | 13-varials           | Various                        | -007            |
| ↓                | ↓       | ↓                | Trip Blank                 | 3-VOA                | HCl                            | -008            |
|                  |         |                  |                            |                      |                                |                 |
|                  |         |                  |                            |                      |                                |                 |
|                  |         |                  |                            |                      |                                |                 |
|                  |         |                  |                            |                      |                                |                 |
| Relinquished by: | Time:   | Relinquished by: | Time:                      | Received by:         | Date                           | Time            |
| [Signature]      | 8-18-16 | [Signature]      | 08/19/16                   | [Signature]          | 08/19/16                       | 0               |
| Relinquished by: | Time:   | Relinquished by: | Time:                      | Received by:         | Date                           | Time            |
|                  |         |                  |                            |                      |                                |                 |

Remarks: See full analyte list.

|                                                                                     |      |          |
|-------------------------------------------------------------------------------------|------|----------|
| Received by:                                                                        | Date | Time     |
|  | 08   | 11/10/00 |
| Received by:                                                                        | Date | Time     |



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

[illegible]

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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4901 Hawkins NE  
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Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

September 26, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: Cross Gradient Wells 8-19-16

OrderNo.: 1608C27

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/20/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



*Hall Environmental Analysis Laboratory*  
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Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

## Case Narrative

WO#: 1608C27  
Date: 9/26/2016

---

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16

---

Analytical Comments for 8260\_W, Sample 1608c27-004a, Batch ID B36700 : Dilution due to matrix

# Analytical Report

Lab Order: 1608C27

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-001A

**Client Sample ID:** MW-1  
**Collection Date:** 8/19/2016 2:45:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID    |
|------------------------------------|--------|-----|------|-------|----|----------------------|-------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                      | Analyst: AG |
| Benzene                            | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Naphthalene                        | ND     | 2.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Acetone                            | ND     | 10  |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 2-Butanone                         | ND     | 10  |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Carbon disulfide                   | ND     | 10  |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 6:56:44 PM | B36700      |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C27

Date Reported: 9/26/2016

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-001A

**Client Sample ID:** MW-1  
**Collection Date:** 8/19/2016 2:45:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units              | DF | Date Analyzed        | Batch ID |
|------------------------------------|--------|--------|------|--------------------|----|----------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      | Analyst: <b>AG</b> |    |                      |          |
| 2-Hexanone                         | ND     | 10     |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Styrene                            | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Surr: 1,2-Dichloroethane-d4        | 101    | 70-130 |      | %Rec               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Surr: 4-Bromofluorobenzene         | 102    | 70-130 |      | %Rec               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Surr: Dibromofluoromethane         | 94.9   | 70-130 |      | %Rec               | 1  | 8/23/2016 6:56:44 PM | B36700   |
| Surr: Toluene-d8                   | 97.3   | 70-130 |      | %Rec               | 1  | 8/23/2016 6:56:44 PM | B36700   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 3 of 64                                    |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-1**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 2:45:00 PM**Lab ID:** 1608C27-001B**Matrix:** Aqueous

| Analyses                                | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|-----------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Gasoline Range Organics (GRO)           | ND     | 0.050  |      | mg/L  | 1  | 8/23/2016 6:56:44 PM | R36700             |
| Surr: BFB                               | 98.5   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:56:44 PM | R36700             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-001C

**Client Sample ID:** MW-1  
**Collection Date:** 8/19/2016 2:45:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/23/2016 1:51:34 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 1:51:34 PM | 27114               |
| Surr: DNOP                            | 115    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 1:51:34 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-1**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 2:45:00 PM**Lab ID:** 1608C27-001D**Matrix:** Aqueous

| <b>Analyses</b>                                 | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b>           | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|-------------------------------------------------|---------------|------------|-------------|------------------------|-----------|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |               |            |             |                        |           |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 240           | 1.0        | H           | mg CO2/L               | 1         | 8/24/2016 3:47:22 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |               |            |             |                        |           |                      | Analyst: <b>LGT</b> |
| Fluoride                                        | 0.45          | 0.10       |             | mg/L                   | 1         | 8/26/2016 2:24:45 PM | R36816              |
| Chloride                                        | 11            | 0.50       |             | mg/L                   | 1         | 8/26/2016 2:24:45 PM | R36816              |
| Bromide                                         | ND            | 0.10       |             | mg/L                   | 1         | 8/26/2016 2:24:45 PM | R36816              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND            | 0.50       | H           | mg/L                   | 1         | 8/26/2016 2:24:45 PM | R36816              |
| Sulfate                                         | 84            | 10         |             | mg/L                   | 20        | 8/26/2016 2:37:10 PM | R36816              |
| Nitrate+Nitrite as N                            | ND            | 1.0        |             | mg/L                   | 5         | 8/26/2016 5:30:55 PM | R36816              |
| <b>SM2320B: ALKALINITY</b>                      |               |            |             |                        |           |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 266.4         | 20.00      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 3:47:22 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND            | 2.000      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 3:47:22 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 266.4         | 20.00      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 3:47:22 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 6 of 64                                    |



**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-1**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 2:45:00 PM**Lab ID:** 1608C27-001E**Matrix:** Aqueous

| <b>Analyses</b>                            | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|--------------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |               |            |             |              |           |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND            | 0.00020    |             | mg/L         | 1         | 9/1/2016 1:12:21 PM  | 27283               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |               |            |             |              |           |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND            | 0.020      |             | mg/L         | 1         | 8/25/2016 2:29:39 PM | 27124               |
| Barium                                     | 0.28          | 0.020      |             | mg/L         | 1         | 8/25/2016 2:29:39 PM | 27124               |
| Cadmium                                    | ND            | 0.0020     |             | mg/L         | 1         | 8/25/2016 2:29:39 PM | 27124               |
| Chromium                                   | ND            | 0.0060     |             | mg/L         | 1         | 8/25/2016 2:29:39 PM | 27124               |
| Lead                                       | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:29:39 PM | 27124               |
| Selenium                                   | ND            | 0.050      |             | mg/L         | 1         | 8/25/2016 2:29:39 PM | 27124               |
| Silver                                     | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:29:39 PM | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 7 of 64                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C27

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-001F

**Client Sample ID:** MW-1  
**Collection Date:** 8/19/2016 2:45:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                       | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:18:41 PM   | 27283        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                       | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Barium                                    | 0.022  | 0.020   |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Calcium                                   | 65     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Iron                                      | 0.22   | 0.020   |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Magnesium                                 | 16     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Manganese                                 | 0.20   | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Potassium                                 | 2.8    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Sodium                                    | 81     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 12:36:59 PM | B37126       |
| Zinc                                      | 0.024  | 0.020   |      | mg/L  | 1  | 9/7/2016 6:14:12 PM   | B37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 8 of 64                                    |

# Analytical Report

Lab Order: 1608C27

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-002A

**Client Sample ID:** Field Blank  
**Collection Date:**  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID    |
|------------------------------------|--------|-----|------|-------|----|----------------------|-------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                      | Analyst: AG |
| Benzene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Naphthalene                        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Acetone                            | ND     | 10  |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 2-Butanone                         | ND     | 10  |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Carbon disulfide                   | ND     | 10  |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L  | 1  | 8/24/2016 5:13:21 PM | R36737      |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 9 of 64                                    |

**Analytical Report**

Lab Order: 1608C27

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-002A

**Client Sample ID:** Field Blank  
**Collection Date:**  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units              | DF | Date Analyzed        | Batch ID |
|------------------------------------|--------|--------|------|--------------------|----|----------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      | Analyst: <b>AG</b> |    |                      |          |
| 2-Hexanone                         | ND     | 10     |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Styrene                            | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Surr: 1,2-Dichloroethane-d4        | 102    | 70-130 |      | %Rec               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Surr: 4-Bromofluorobenzene         | 99.8   | 70-130 |      | %Rec               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Surr: Dibromofluoromethane         | 95.3   | 70-130 |      | %Rec               | 1  | 8/24/2016 5:13:21 PM | R36737   |
| Surr: Toluene-d8                   | 100    | 70-130 |      | %Rec               | 1  | 8/24/2016 5:13:21 PM | R36737   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 10 of 64                                   |

# Analytical Report

Lab Order: 1608C27

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-003A

**Client Sample ID:** MW-13  
**Collection Date:** 8/19/2016 10:45:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units              | DF | Date Analyzed        | Batch ID |
|------------------------------------|--------|-----|------|--------------------|----|----------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      | Analyst: <b>AG</b> |    |                      |          |
| Benzene                            | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Toluene                            | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Naphthalene                        | ND     | 2.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Acetone                            | ND     | 10  |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Bromobenzene                       | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Bromoform                          | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Bromomethane                       | ND     | 3.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 2-Butanone                         | ND     | 10  |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Carbon disulfide                   | ND     | 10  |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Chloroethane                       | ND     | 2.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Chloroform                         | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Chloromethane                      | ND     | 3.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Dibromomethane                     | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L               | 1  | 8/23/2016 7:25:28 PM | B36700   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C27

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-003A

**Client Sample ID:** MW-13  
**Collection Date:** 8/19/2016 10:45:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Surr: 1,2-Dichloroethane-d4        | 99.7   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Surr: 4-Bromofluorobenzene         | 99.5   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Surr: Dibromofluoromethane         | 96.1   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:25:28 PM | B36700             |
| Surr: Toluene-d8                   | 99.7   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:25:28 PM | B36700             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 12 of 64                                   |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-13**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 10:45:00 AM**Lab ID:** 1608C27-003B**Matrix:** Aqueous

| <b>Analyses</b>                         | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>    |
|-----------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|--------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |               |            |             |              |           |                      | Analyst: <b>AG</b> |
| Gasoline Range Organics (GRO)           | ND            | 0.050      |             | mg/L         | 1         | 8/23/2016 7:25:28 PM | R36700             |
| Surr: BFB                               | 101           | 70-130     |             | %Rec         | 1         | 8/23/2016 7:25:28 PM | R36700             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-13**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 10:45:00 AM**Lab ID:** 1608C27-003C**Matrix:** Aqueous

| <b>Analyses</b>                       | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|---------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |               |            |             |              |           |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND            | 0.20       |             | mg/L         | 1         | 8/23/2016 2:56:43 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND            | 2.5        |             | mg/L         | 1         | 8/23/2016 2:56:43 PM | 27114               |
| Surr: DNOP                            | 114           | 67.9-149   |             | %Rec         | 1         | 8/23/2016 2:56:43 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 14 of 64                                   |



**Analytical Report**Lab Order: **1608C27****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-13**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 10:45:00 AM**Lab ID:** 1608C27-003D**Matrix:** Aqueous

| <b>Analyses</b>                                 | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b>           | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|-------------------------------------------------|---------------|------------|-------------|------------------------|-----------|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |               |            |             |                        |           |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 950           | 1.0        | H           | mg CO2/L               | 1         | 8/24/2016 4:00:02 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |               |            |             |                        |           |                      | Analyst: <b>LGT</b> |
| Fluoride                                        | ND            | 0.10       |             | mg/L                   | 1         | 8/26/2016 2:49:35 PM | R36816              |
| Chloride                                        | 230           | 10         |             | mg/L                   | 20        | 8/26/2016 3:01:59 PM | R36816              |
| Bromide                                         | 3.0           | 0.10       |             | mg/L                   | 1         | 8/26/2016 2:49:35 PM | R36816              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND            | 0.50       | H           | mg/L                   | 1         | 8/26/2016 2:49:35 PM | R36816              |
| Sulfate                                         | 850           | 10         | *           | mg/L                   | 20        | 8/26/2016 3:01:59 PM | R36816              |
| Nitrate+Nitrite as N                            | 1.8           | 1.0        |             | mg/L                   | 5         | 8/26/2016 5:43:19 PM | R36816              |
| <b>SM2320B: ALKALINITY</b>                      |               |            |             |                        |           |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 954.3         | 20.00      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 4:00:02 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND            | 2.000      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 4:00:02 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 954.3         | 20.00      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 4:00:02 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 15 of 64                                   |

**Analytical Report**Lab Order: **1608C27****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-13**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 10:45:00 AM**Lab ID:** 1608C27-003E**Matrix:** Aqueous

| <b>Analyses</b>                            | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|--------------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |               |            |             |              |           |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND            | 0.00020    |             | mg/L         | 1         | 9/1/2016 1:20:41 PM  | 27283               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |               |            |             |              |           |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND            | 0.020      |             | mg/L         | 1         | 8/25/2016 2:33:08 PM | 27124               |
| Barium                                     | 0.052         | 0.020      |             | mg/L         | 1         | 8/25/2016 2:33:08 PM | 27124               |
| Cadmium                                    | ND            | 0.0020     |             | mg/L         | 1         | 8/25/2016 2:33:08 PM | 27124               |
| Chromium                                   | 0.059         | 0.0060     |             | mg/L         | 1         | 8/25/2016 2:33:08 PM | 27124               |
| Lead                                       | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:33:08 PM | 27124               |
| Selenium                                   | ND            | 0.050      |             | mg/L         | 1         | 8/25/2016 2:33:08 PM | 27124               |
| Silver                                     | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:33:08 PM | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 16 of 64                                   |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C27

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-003F

**Client Sample ID:** MW-13  
**Collection Date:** 8/19/2016 10:45:00 AM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID            |
|-------------------------------------------|--------|---------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                       | Analyst: <b>pmf</b> |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:22:40 PM   | 27283               |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                       | Analyst: <b>MED</b> |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Barium                                    | 0.022  | 0.020   |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Calcium                                   | 230    | 5.0     |      | mg/L  | 5  | 9/7/2016 6:25:37 PM   | B37036              |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Iron                                      | 0.044  | 0.020   |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Magnesium                                 | 82     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Manganese                                 | 0.95   | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Potassium                                 | 4.0    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |
| Sodium                                    | 540    | 10      |      | mg/L  | 10 | 9/12/2016 12:40:22 PM | B37126              |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 12:38:39 PM | B37126              |
| Zinc                                      | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:23:45 PM   | B37036              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C27

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-004A

**Client Sample ID:** MW-27  
**Collection Date:** 8/19/2016 9:50:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID    |
|------------------------------------|--------|-----|------|-------|----|----------------------|-------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                      | Analyst: AG |
| Benzene                            | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Toluene                            | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Ethylbenzene                       | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Methyl tert-butyl ether (MTBE)     | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,2,4-Trimethylbenzene             | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,3,5-Trimethylbenzene             | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,2-Dichloroethane (EDC)           | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,2-Dibromoethane (EDB)            | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Naphthalene                        | ND     | 4.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1-Methylnaphthalene                | ND     | 8.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 2-Methylnaphthalene                | ND     | 8.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Acetone                            | ND     | 20  | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Bromobenzene                       | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Bromodichloromethane               | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Bromoform                          | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Bromomethane                       | ND     | 6.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 2-Butanone                         | ND     | 20  | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Carbon disulfide                   | ND     | 20  | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Carbon Tetrachloride               | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Chlorobenzene                      | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Chloroethane                       | ND     | 4.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Chloroform                         | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Chloromethane                      | ND     | 6.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 2-Chlorotoluene                    | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 4-Chlorotoluene                    | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| cis-1,2-DCE                        | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| cis-1,3-Dichloropropene            | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,2-Dibromo-3-chloropropane        | ND     | 4.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Dibromochloromethane               | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Dibromomethane                     | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,2-Dichlorobenzene                | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,3-Dichlorobenzene                | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,4-Dichlorobenzene                | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Dichlorodifluoromethane            | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,1-Dichloroethane                 | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,1-Dichloroethene                 | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,2-Dichloropropane                | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,3-Dichloropropane                | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 2,2-Dichloropropane                | ND     | 4.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,1-Dichloropropene                | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Hexachlorobutadiene                | ND     | 2.0 | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 18 of 64                                   |

**Analytical Report**

Lab Order: 1608C27

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-004A

**Client Sample ID:** MW-27  
**Collection Date:** 8/19/2016 9:50:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID    |
|------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: AG |
| 2-Hexanone                         | ND     | 20     | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Isopropylbenzene                   | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 4-Isopropyltoluene                 | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 4-Methyl-2-pentanone               | ND     | 20     | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Methylene Chloride                 | ND     | 6.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| n-Butylbenzene                     | ND     | 6.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| n-Propylbenzene                    | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| sec-Butylbenzene                   | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Styrene                            | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| tert-Butylbenzene                  | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,1,1,2-Tetrachloroethane          | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,1,2,2-Tetrachloroethane          | ND     | 4.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Tetrachloroethene (PCE)            | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| trans-1,2-DCE                      | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| trans-1,3-Dichloropropene          | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,2,3-Trichlorobenzene             | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,2,4-Trichlorobenzene             | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,1,1-Trichloroethane              | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,1,2-Trichloroethane              | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Trichloroethene (TCE)              | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Trichlorofluoromethane             | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| 1,2,3-Trichloropropane             | ND     | 4.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Vinyl chloride                     | ND     | 2.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Xylenes, Total                     | ND     | 3.0    | D    | µg/L  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Surr: 1,2-Dichloroethane-d4        | 100    | 70-130 | D    | %Rec  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Surr: 4-Bromofluorobenzene         | 96.3   | 70-130 | D    | %Rec  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Surr: Dibromofluoromethane         | 94.8   | 70-130 | D    | %Rec  | 2  | 8/23/2016 7:54:09 PM | B36700      |
| Surr: Toluene-d8                   | 103    | 70-130 | D    | %Rec  | 2  | 8/23/2016 7:54:09 PM | B36700      |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 19 of 64                                   |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-27**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 9:50:00 AM**Lab ID:** 1608C27-004B**Matrix:** Aqueous

| <b>Analyses</b>                         | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>    |
|-----------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|--------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |               |            |             |              |           |                      | Analyst: <b>AG</b> |
| Gasoline Range Organics (GRO)           | 0.20          | 0.10       |             | mg/L         | 2         | 8/23/2016 7:54:09 PM | R36700             |
| Surr: BFB                               | 106           | 70-130     |             | %Rec         | 2         | 8/23/2016 7:54:09 PM | R36700             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-004C

**Client Sample ID:** MW-27  
**Collection Date:** 8/19/2016 9:50:00 AM  
**Matrix:** Aqueous

| <b>Analyses</b>                       | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|---------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |               |            |             |              |           |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | 2.2           | 0.20       |             | mg/L         | 1         | 8/23/2016 3:18:21 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND            | 2.5        |             | mg/L         | 1         | 8/23/2016 3:18:21 PM | 27114               |
| Surr: DNOP                            | 108           | 67.9-149   |             | %Rec         | 1         | 8/23/2016 3:18:21 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C27

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-27**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 9:50:00 AM**Lab ID:** 1608C27-004D**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF  | Date Analyzed        | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|-----|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |     |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 400    | 1.0   | H    | mg CO2/L               | 1   | 8/24/2016 4:35:09 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |     |                      | Analyst: <b>LGT</b> |
| Fluoride                                        | ND     | 0.50  |      | mg/L                   | 5   | 9/1/2016 10:53:17 PM | A36952              |
| Chloride                                        | 360    | 10    | *    | mg/L                   | 20  | 8/26/2016 3:26:49 PM | R36816              |
| Bromide                                         | 3.2    | 0.10  |      | mg/L                   | 1   | 8/26/2016 3:14:24 PM | R36816              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND     | 10    | H    | mg/L                   | 20  | 8/26/2016 3:26:49 PM | R36816              |
| Sulfate                                         | 2700   | 50    | *    | mg/L                   | 100 | 9/1/2016 11:05:41 PM | A36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5   | 8/26/2016 5:55:44 PM | R36816              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |     |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 408.9  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1   | 8/24/2016 4:35:09 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1   | 8/24/2016 4:35:09 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 408.9  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1   | 8/24/2016 4:35:09 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-004E

**Client Sample ID:** MW-27  
**Collection Date:** 8/19/2016 9:50:00 AM  
**Matrix:** Aqueous

| Analyses                                   | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID            |
|--------------------------------------------|--------|---------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |         |      |       |    |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:24:40 PM  | 27283               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |         |      |       |    |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND     | 0.020   |      | mg/L  | 1  | 8/25/2016 2:36:34 PM | 27124               |
| Barium                                     | 0.17   | 0.020   |      | mg/L  | 1  | 8/25/2016 2:36:34 PM | 27124               |
| Cadmium                                    | ND     | 0.0020  |      | mg/L  | 1  | 8/25/2016 2:36:34 PM | 27124               |
| Chromium                                   | ND     | 0.0060  |      | mg/L  | 1  | 8/25/2016 2:36:34 PM | 27124               |
| Lead                                       | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 2:36:34 PM | 27124               |
| Selenium                                   | ND     | 0.050   |      | mg/L  | 1  | 8/25/2016 2:36:34 PM | 27124               |
| Silver                                     | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 2:36:34 PM | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C27

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-004F

**Client Sample ID:** MW-27  
**Collection Date:** 8/19/2016 9:50:00 AM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                       | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:26:42 PM   | 27283        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                       | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Barium                                    | 0.044  | 0.020   |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Calcium                                   | 550    | 10      |      | mg/L  | 10 | 9/12/2016 12:43:26 PM | B37126       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Iron                                      | 0.74   | 0.020   |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Magnesium                                 | 92     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Manganese                                 | 2.7    | 0.010   |      | mg/L  | 5  | 9/7/2016 6:29:29 PM   | B37036       |
| Potassium                                 | 5.3    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |
| Sodium                                    | 720    | 10      |      | mg/L  | 10 | 9/12/2016 12:43:26 PM | B37126       |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 12:41:57 PM | B37126       |
| Zinc                                      | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:27:30 PM   | B37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C27

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-005A

**Client Sample ID:** MW-32  
**Collection Date:** 8/19/2016 9:00:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units       | DF | Date Analyzed        | Batch ID |
|------------------------------------|--------|-----|------|-------------|----|----------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      | Analyst: AG |    |                      |          |
| Benzene                            | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Toluene                            | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Naphthalene                        | ND     | 2.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Acetone                            | ND     | 10  |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Bromobenzene                       | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Bromoform                          | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Bromomethane                       | ND     | 3.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 2-Butanone                         | ND     | 10  |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Carbon disulfide                   | ND     | 10  |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Chloroethane                       | ND     | 2.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Chloroform                         | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Chloromethane                      | ND     | 3.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Dibromomethane                     | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:22:55 PM | B36700   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C27

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-005A

**Client Sample ID:** MW-32  
**Collection Date:** 8/19/2016 9:00:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID    |
|------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: AG |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Surr: 1,2-Dichloroethane-d4        | 102    | 70-130 |      | %Rec  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Surr: 4-Bromofluorobenzene         | 100    | 70-130 |      | %Rec  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Surr: Dibromofluoromethane         | 98.7   | 70-130 |      | %Rec  | 1  | 8/23/2016 8:22:55 PM | B36700      |
| Surr: Toluene-d8                   | 98.1   | 70-130 |      | %Rec  | 1  | 8/23/2016 8:22:55 PM | B36700      |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 26 of 64                                   |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-005B

**Client Sample ID:** MW-32  
**Collection Date:** 8/19/2016 9:00:00 AM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|-----------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Gasoline Range Organics (GRO)           | ND     | 0.050  |      | mg/L  | 1  | 8/24/2016 3:47:04 PM | G36737             |
| Surr: BFB                               | 98.1   | 70-130 |      | %Rec  | 1  | 8/24/2016 3:47:04 PM | G36737             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-005C

**Client Sample ID:** MW-32  
**Collection Date:** 8/19/2016 9:00:00 AM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/23/2016 3:40:13 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 3:40:13 PM | 27114               |
| Surr: DNOP                            | 114    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 3:40:13 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-32**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 9:00:00 AM**Lab ID:** 1608C27-005D**Matrix:** Aqueous

| <b>Analyses</b>                                 | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b>           | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|-------------------------------------------------|---------------|------------|-------------|------------------------|-----------|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |               |            |             |                        |           |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 170           | 1.0        | H           | mg CO2/L               | 1         | 8/24/2016 4:53:34 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |               |            |             |                        |           |                      | Analyst: <b>LGT</b> |
| Fluoride                                        | ND            | 0.10       |             | mg/L                   | 1         | 8/26/2016 3:39:13 PM | R36816              |
| Chloride                                        | 630           | 25         | *           | mg/L                   | 50        | 9/1/2016 11:18:05 PM | A36952              |
| Bromide                                         | 4.4           | 0.10       |             | mg/L                   | 1         | 8/26/2016 3:39:13 PM | R36816              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND            | 10         | H           | mg/L                   | 20        | 8/26/2016 3:51:38 PM | R36816              |
| Sulfate                                         | 1600          | 25         | *           | mg/L                   | 50        | 9/1/2016 11:18:05 PM | A36952              |
| Nitrate+Nitrite as N                            | 40            | 1.0        | *           | mg/L                   | 5         | 8/26/2016 6:08:09 PM | R36816              |
| <b>SM2320B: ALKALINITY</b>                      |               |            |             |                        |           |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 186.9         | 20.00      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 4:53:34 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND            | 2.000      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 4:53:34 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 186.9         | 20.00      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 4:53:34 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-32**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 9:00:00 AM**Lab ID:** 1608C27-005E**Matrix:** Aqueous

| <b>Analyses</b>                            | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|--------------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |               |            |             |              |           |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND            | 0.00020    |             | mg/L         | 1         | 9/1/2016 1:32:58 PM  | 27283               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |               |            |             |              |           |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND            | 0.020      |             | mg/L         | 1         | 8/25/2016 2:40:07 PM | 27124               |
| Barium                                     | 0.033         | 0.020      |             | mg/L         | 1         | 8/25/2016 2:40:07 PM | 27124               |
| Cadmium                                    | ND            | 0.0020     |             | mg/L         | 1         | 8/25/2016 2:40:07 PM | 27124               |
| Chromium                                   | ND            | 0.0060     |             | mg/L         | 1         | 8/25/2016 2:40:07 PM | 27124               |
| Lead                                       | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:40:07 PM | 27124               |
| Selenium                                   | ND            | 0.050      |             | mg/L         | 1         | 8/25/2016 2:40:07 PM | 27124               |
| Silver                                     | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:40:07 PM | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C27

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-005F

**Client Sample ID:** MW-32  
**Collection Date:** 8/19/2016 9:00:00 AM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                       | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:34:59 PM   | 27283        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                       | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Barium                                    | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Calcium                                   | 340    | 5.0     |      | mg/L  | 5  | 9/7/2016 6:33:25 PM   | B37036       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Iron                                      | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Magnesium                                 | 50     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Manganese                                 | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Potassium                                 | 4.0    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |
| Sodium                                    | 810    | 10      |      | mg/L  | 10 | 9/12/2016 12:46:47 PM | B37126       |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 12:45:03 PM | B37126       |
| Zinc                                      | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:31:31 PM   | B37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C27

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-006A

**Client Sample ID:** MW-32-DUP  
**Collection Date:** 8/19/2016 9:10:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units       | DF | Date Analyzed        | Batch ID |
|------------------------------------|--------|-----|------|-------------|----|----------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      | Analyst: AG |    |                      |          |
| Benzene                            | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Toluene                            | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Naphthalene                        | ND     | 2.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Acetone                            | ND     | 10  |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Bromobenzene                       | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Bromoform                          | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Bromomethane                       | ND     | 3.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 2-Butanone                         | ND     | 10  |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Carbon disulfide                   | ND     | 10  |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Chloroethane                       | ND     | 2.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Chloroform                         | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Chloromethane                      | ND     | 3.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Dibromomethane                     | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L        | 1  | 8/23/2016 8:51:43 PM | B36700   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 32 of 64                                   |

**Analytical Report**

Lab Order: 1608C27

Date Reported: 9/26/2016

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-006A

**Client Sample ID:** MW-32-DUP  
**Collection Date:** 8/19/2016 9:10:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID    |
|------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: AG |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Surr: 1,2-Dichloroethane-d4        | 94.1   | 70-130 |      | %Rec  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Surr: 4-Bromofluorobenzene         | 100    | 70-130 |      | %Rec  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Surr: Dibromofluoromethane         | 94.0   | 70-130 |      | %Rec  | 1  | 8/23/2016 8:51:43 PM | B36700      |
| Surr: Toluene-d8                   | 99.2   | 70-130 |      | %Rec  | 1  | 8/23/2016 8:51:43 PM | B36700      |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 33 of 64                                   |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-32-DUP**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 9:10:00 AM**Lab ID:** 1608C27-006B**Matrix:** Aqueous

| <b>Analyses</b>                         | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>    |
|-----------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|--------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |               |            |             |              |           |                      | Analyst: <b>AG</b> |
| Gasoline Range Organics (GRO)           | ND            | 0.050      |             | mg/L         | 1         | 8/23/2016 8:51:43 PM | R36700             |
| Surr: BFB                               | 99.9          | 70-130     |             | %Rec         | 1         | 8/23/2016 8:51:43 PM | R36700             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-32-DUP**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 9:10:00 AM**Lab ID:** 1608C27-006C**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/23/2016 4:01:53 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 4:01:53 PM | 27114               |
| Surr: DNOP                            | 109    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 4:01:53 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-32-DUP**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 9:10:00 AM**Lab ID:** 1608C27-006D**Matrix:** Aqueous

| <b>Analyses</b>                                 | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b>           | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|-------------------------------------------------|---------------|------------|-------------|------------------------|-----------|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |               |            |             |                        |           |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 170           | 1.0        | H           | mg CO2/L               | 1         | 8/24/2016 5:04:34 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |               |            |             |                        |           |                      | Analyst: <b>LGT</b> |
| Fluoride                                        | ND            | 0.10       |             | mg/L                   | 1         | 8/26/2016 4:28:52 PM | R36816              |
| Chloride                                        | 610           | 25         | *           | mg/L                   | 50        | 9/1/2016 11:30:30 PM | A36952              |
| Bromide                                         | 4.4           | 0.10       |             | mg/L                   | 1         | 8/26/2016 4:28:52 PM | R36816              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND            | 10         | H           | mg/L                   | 20        | 8/26/2016 4:41:17 PM | R36816              |
| Sulfate                                         | 1500          | 25         | *           | mg/L                   | 50        | 9/1/2016 11:30:30 PM | A36952              |
| Nitrate+Nitrite as N                            | 40            | 1.0        | *           | mg/L                   | 5         | 8/26/2016 6:57:47 PM | R36816              |
| <b>SM2320B: ALKALINITY</b>                      |               |            |             |                        |           |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 185.4         | 20.00      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 5:04:34 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND            | 2.000      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 5:04:34 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 185.4         | 20.00      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 5:04:34 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-32-DUP**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 9:10:00 AM**Lab ID:** 1608C27-006E**Matrix:** Aqueous

| <b>Analyses</b>                            | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|--------------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |               |            |             |              |           |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND            | 0.00020    |             | mg/L         | 1         | 9/1/2016 1:37:02 PM  | 27283               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |               |            |             |              |           |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND            | 0.020      |             | mg/L         | 1         | 8/25/2016 2:43:50 PM | 27124               |
| Barium                                     | 0.028         | 0.020      |             | mg/L         | 1         | 8/25/2016 2:43:50 PM | 27124               |
| Cadmium                                    | ND            | 0.0020     |             | mg/L         | 1         | 8/25/2016 2:43:50 PM | 27124               |
| Chromium                                   | ND            | 0.0060     |             | mg/L         | 1         | 8/25/2016 2:43:50 PM | 27124               |
| Lead                                       | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:43:50 PM | 27124               |
| Selenium                                   | ND            | 0.050      |             | mg/L         | 1         | 8/25/2016 2:43:50 PM | 27124               |
| Silver                                     | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:43:50 PM | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-32-DUP**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 9:10:00 AM**Lab ID:** 1608C27-006F**Matrix:** Aqueous

| <b>Analyses</b>                           | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b>  | <b>Batch ID</b>     |
|-------------------------------------------|---------------|------------|-------------|--------------|-----------|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>           |               |            |             |              |           |                       | Analyst: <b>pmf</b> |
| Mercury                                   | ND            | 0.00020    |             | mg/L         | 1         | 9/1/2016 1:39:05 PM   | 27283               |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |               |            |             |              |           |                       | Analyst: <b>MED</b> |
| Arsenic                                   | ND            | 0.020      |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Barium                                    | ND            | 0.020      |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Cadmium                                   | ND            | 0.0020     |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Calcium                                   | 330           | 5.0        |             | mg/L         | 5         | 9/7/2016 6:37:23 PM   | B37036              |
| Chromium                                  | ND            | 0.0060     |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Copper                                    | ND            | 0.0060     |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Iron                                      | ND            | 0.020      |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Lead                                      | ND            | 0.0050     |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Magnesium                                 | 50            | 1.0        |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Manganese                                 | ND            | 0.0020     |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Potassium                                 | 4.0           | 1.0        |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Selenium                                  | ND            | 0.050      |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Silver                                    | ND            | 0.0050     |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |
| Sodium                                    | 820           | 10         |             | mg/L         | 10        | 9/12/2016 12:55:07 PM | B37126              |
| Uranium                                   | ND            | 0.10       |             | mg/L         | 1         | 9/12/2016 12:48:23 PM | B37126              |
| Zinc                                      | 0.022         | 0.020      |             | mg/L         | 1         | 9/7/2016 6:35:28 PM   | B37036              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 38 of 64                                   |



# Analytical Report

Lab Order: 1608C27

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-33

**Project:** Cross Gradient Wells 8-19-16

**Collection Date:** 8/19/2016 8:20:00 AM

**Lab ID:** 1608C27-007A

**Matrix:** Aqueous

| Analyses                           | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID           |
|------------------------------------|--------|-----|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                            | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Naphthalene                        | ND     | 2.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Acetone                            | ND     | 10  |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 2-Butanone                         | ND     | 10  |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Carbon disulfide                   | ND     | 10  |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 39 of 64                                   |

**Analytical Report**

Lab Order: 1608C27

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-007A

**Client Sample ID:** MW-33  
**Collection Date:** 8/19/2016 8:20:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID    |
|------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: AG |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Surr: 1,2-Dichloroethane-d4        | 101    | 70-130 |      | %Rec  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Surr: 4-Bromofluorobenzene         | 100    | 70-130 |      | %Rec  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Surr: Dibromofluoromethane         | 97.0   | 70-130 |      | %Rec  | 1  | 8/23/2016 9:20:30 PM | B36700      |
| Surr: Toluene-d8                   | 98.6   | 70-130 |      | %Rec  | 1  | 8/23/2016 9:20:30 PM | B36700      |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 40 of 64                                   |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-33**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 8:20:00 AM**Lab ID:** 1608C27-007B**Matrix:** Aqueous

| <b>Analyses</b>                         | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>    |
|-----------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|--------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |               |            |             |              |           |                      | Analyst: <b>AG</b> |
| Gasoline Range Organics (GRO)           | ND            | 0.050      |             | mg/L         | 1         | 8/23/2016 9:20:30 PM | R36700             |
| Surr: BFB                               | 98.2          | 70-130     |             | %Rec         | 1         | 8/23/2016 9:20:30 PM | R36700             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-33**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 8:20:00 AM**Lab ID:** 1608C27-007C**Matrix:** Aqueous

| <b>Analyses</b>                       | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|---------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |               |            |             |              |           |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND            | 0.20       |             | mg/L         | 1         | 8/23/2016 4:23:35 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND            | 2.5        |             | mg/L         | 1         | 8/23/2016 4:23:35 PM | 27114               |
| Surr: DNOP                            | 113           | 67.9-149   |             | %Rec         | 1         | 8/23/2016 4:23:35 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C27****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-33**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 8:20:00 AM**Lab ID:** 1608C27-007D**Matrix:** Aqueous

| <b>Analyses</b>                                 | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b>           | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|-------------------------------------------------|---------------|------------|-------------|------------------------|-----------|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |               |            |             |                        |           |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 110           | 1.0        | H           | mg CO2/L               | 1         | 8/24/2016 5:15:29 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |               |            |             |                        |           |                      | Analyst: <b>LGT</b> |
| Fluoride                                        | 0.51          | 0.10       |             | mg/L                   | 1         | 8/26/2016 4:53:42 PM | R36816              |
| Chloride                                        | 250           | 10         |             | mg/L                   | 20        | 8/26/2016 5:06:06 PM | R36816              |
| Bromide                                         | 1.4           | 0.10       |             | mg/L                   | 1         | 8/26/2016 4:53:42 PM | R36816              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND            | 10         | H           | mg/L                   | 20        | 8/26/2016 5:06:06 PM | R36816              |
| Sulfate                                         | 2500          | 50         | *           | mg/L                   | 100       | 9/1/2016 11:42:55 PM | A36952              |
| Nitrate+Nitrite as N                            | 40            | 1.0        | *           | mg/L                   | 5         | 8/26/2016 7:10:12 PM | R36816              |
| <b>SM2320B: ALKALINITY</b>                      |               |            |             |                        |           |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 125.5         | 20.00      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 5:15:29 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND            | 2.000      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 5:15:29 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 125.5         | 20.00      |             | mg/L CaCO <sub>3</sub> | 1         | 8/24/2016 5:15:29 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 43 of 64                                   |

**Analytical Report**Lab Order: **1608C27****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-33**Project:** Cross Gradient Wells 8-19-16**Collection Date:** 8/19/2016 8:20:00 AM**Lab ID:** 1608C27-007E**Matrix:** Aqueous

| <b>Analyses</b>                            | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|--------------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |               |            |             |              |           |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND            | 0.00020    |             | mg/L         | 1         | 9/1/2016 1:41:08 PM  | 27283               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |               |            |             |              |           |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND            | 0.020      |             | mg/L         | 1         | 8/25/2016 2:53:16 PM | 27124               |
| Barium                                     | 0.021         | 0.020      |             | mg/L         | 1         | 8/25/2016 2:53:16 PM | 27124               |
| Cadmium                                    | ND            | 0.0020     |             | mg/L         | 1         | 8/25/2016 2:53:16 PM | 27124               |
| Chromium                                   | ND            | 0.0060     |             | mg/L         | 1         | 8/25/2016 2:53:16 PM | 27124               |
| Lead                                       | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:53:16 PM | 27124               |
| Selenium                                   | 0.063         | 0.050      |             | mg/L         | 1         | 8/25/2016 2:53:16 PM | 27124               |
| Silver                                     | ND            | 0.0050     |             | mg/L         | 1         | 8/25/2016 2:53:16 PM | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 44 of 64                                   |

**Analytical Report**

Lab Order: 1608C27

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-007F

**Client Sample ID:** MW-33  
**Collection Date:** 8/19/2016 8:20:00 AM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID            |
|-------------------------------------------|--------|---------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                       | Analyst: <b>pmf</b> |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:43:12 PM   | 27283               |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                       | Analyst: <b>MED</b> |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Barium                                    | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Calcium                                   | 480    | 5.0     |      | mg/L  | 5  | 9/7/2016 6:48:28 PM   | B37036              |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Iron                                      | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Magnesium                                 | 69     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Manganese                                 | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Potassium                                 | 5.5    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Selenium                                  | 0.097  | 0.050   |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |
| Sodium                                    | 820    | 10      |      | mg/L  | 10 | 9/12/2016 12:58:28 PM | B37126              |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 12:56:44 PM | B37126              |
| Zinc                                      | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:39:26 PM   | B37036              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 45 of 64                                   |

# Analytical Report

Lab Order: 1608C27

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-008A

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Matrix:** Trip Blank

| Analyses                           | Result | PQL | Qual | Units       | DF | Date Analyzed        | Batch ID |
|------------------------------------|--------|-----|------|-------------|----|----------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      | Analyst: AG |    |                      |          |
| Benzene                            | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Toluene                            | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Naphthalene                        | ND     | 2.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Acetone                            | ND     | 10  |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Bromobenzene                       | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Bromoform                          | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Bromomethane                       | ND     | 3.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 2-Butanone                         | ND     | 10  |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Carbon disulfide                   | ND     | 10  |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Chloroethane                       | ND     | 2.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Chloroform                         | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Chloromethane                      | ND     | 3.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Dibromomethane                     | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,1-Dichloropropene                | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Hexachlorobutadiene                | ND     | 1.0 |      | µg/L        | 1  | 8/25/2016 7:13:52 PM | W36763   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 46 of 64                                   |



**Analytical Report**

Lab Order: 1608C27

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross Gradient Wells 8-19-16  
**Lab ID:** 1608C27-008A

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Matrix:** Trip Blank

| Analyses                           | Result | PQL    | Qual | Units              | DF | Date Analyzed        | Batch ID |
|------------------------------------|--------|--------|------|--------------------|----|----------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      | Analyst: <b>AG</b> |    |                      |          |
| 2-Hexanone                         | ND     | 10     |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Styrene                            | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Surr: 1,2-Dichloroethane-d4        | 97.3   | 70-130 |      | %Rec               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Surr: 4-Bromofluorobenzene         | 96.2   | 70-130 |      | %Rec               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Surr: Dibromofluoromethane         | 94.7   | 70-130 |      | %Rec               | 1  | 8/25/2016 7:13:52 PM | W36763   |
| Surr: Toluene-d8                   | 96.1   | 70-130 |      | %Rec               | 1  | 8/25/2016 7:13:52 PM | W36763   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 47 of 64                                   |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                                  |                                 |      |                                           |             |                    |          |           |      |          |      |
|----------------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>              | SampType: <b>MBLK</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b>            | Batch ID: <b>R36816</b>         |      | RunNo: <b>36816</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                       | Analysis Date: <b>8/26/2016</b> |      | SeqNo: <b>1141089</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                          | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                         | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Chloride                         | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |
| Bromide                          | ND                              | 0.10 |                                           |             |                    |          |           |      |          |      |
| Phosphorus, Orthophosphate (As P | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |
| Sulfate                          | ND                              | 0.50 |                                           |             |                    |          |           |      |          |      |
| Nitrate+Nitrite as N             | ND                              | 0.20 |                                           |             |                    |          |           |      |          |      |

|                                  |                                 |      |                                           |             |                    |          |           |      |          |      |
|----------------------------------|---------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>             | SampType: <b>LCS</b>            |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b>           | Batch ID: <b>R36816</b>         |      | RunNo: <b>36816</b>                       |             |                    |          |           |      |          |      |
| Prep Date:                       | Analysis Date: <b>8/26/2016</b> |      | SeqNo: <b>1141090</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                          | Result                          | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                         | 0.50                            | 0.10 | 0.5000                                    | 0           | 100                | 90       | 110       |      |          |      |
| Chloride                         | 4.6                             | 0.50 | 5.000                                     | 0           | 93.0               | 90       | 110       |      |          |      |
| Bromide                          | 2.4                             | 0.10 | 2.500                                     | 0           | 94.1               | 90       | 110       |      |          |      |
| Phosphorus, Orthophosphate (As P | 4.7                             | 0.50 | 5.000                                     | 0           | 93.9               | 90       | 110       |      |          |      |
| Sulfate                          | 9.4                             | 0.50 | 10.00                                     | 0           | 94.4               | 90       | 110       |      |          |      |
| Nitrate+Nitrite as N             | 3.4                             | 0.20 | 3.500                                     | 0           | 95.9               | 90       | 110       |      |          |      |

|                       |                                |      |                                           |             |                    |          |           |      |          |      |
|-----------------------|--------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>MB</b>   | SampType: <b>MBLK</b>          |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>PBW</b> | Batch ID: <b>A36952</b>        |      | RunNo: <b>36952</b>                       |             |                    |          |           |      |          |      |
| Prep Date:            | Analysis Date: <b>9/1/2016</b> |      | SeqNo: <b>1145113</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte               | Result                         | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride              | ND                             | 0.10 |                                           |             |                    |          |           |      |          |      |
| Chloride              | ND                             | 0.50 |                                           |             |                    |          |           |      |          |      |
| Sulfate               | ND                             | 0.50 |                                           |             |                    |          |           |      |          |      |

|                        |                                |      |                                           |             |                    |          |           |      |          |      |
|------------------------|--------------------------------|------|-------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Sample ID <b>LCS</b>   | SampType: <b>LCS</b>           |      | TestCode: <b>EPA Method 300.0: Anions</b> |             |                    |          |           |      |          |      |
| Client ID: <b>LCSW</b> | Batch ID: <b>A36952</b>        |      | RunNo: <b>36952</b>                       |             |                    |          |           |      |          |      |
| Prep Date:             | Analysis Date: <b>9/1/2016</b> |      | SeqNo: <b>1145114</b>                     |             | Units: <b>mg/L</b> |          |           |      |          |      |
| Analyte                | Result                         | PQL  | SPK value                                 | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride               | 0.54                           | 0.10 | 0.5000                                    | 0           | 107                | 90       | 110       |      |          |      |
| Chloride               | 4.8                            | 0.50 | 5.000                                     | 0           | 96.7               | 90       | 110       |      |          |      |
| Sulfate                | 10                             | 0.50 | 10.00                                     | 0           | 99.8               | 90       | 110       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                             |           |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-27114 |      | SampType: LCS            |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |      | Batch ID: 27114          |             | RunNo: 36683                             |          |             |      |          |      |
| Prep Date:                  | 8/23/2016 |      | Analysis Date: 8/23/2016 |             | SeqNo: 1136777                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 2.8       | 0.20 | 2.500                    | 0           | 112                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.26      |      | 0.2500                   |             | 102                                      | 67.9     | 149         |      |          |      |

|                                |           |                          |           |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|--------------------------|-----------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-27114  | SampType: MBLK           |           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       | Batch ID: 27114          |           |             | RunNo: 36683                             |          |             |      |          |      |
| Prep Date:                     | 8/23/2016 | Analysis Date: 8/23/2016 |           |             | SeqNo: 1136780                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL                      | SPK value | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20                     |           |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5                      |           |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.49      |                          | 0.5000    |             | 97.5                                     | 67.9     | 149         |      |          |      |

|                             |                |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|----------------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1608C27-001CMS |      | SampType: MS             |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | MW-1           |      | Batch ID: 27114          |             | RunNo: 36683                             |          |             |      |          |      |
| Prep Date:                  | 8/23/2016      |      | Analysis Date: 8/23/2016 |             | SeqNo: 1136890                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result         | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 3.1            | 0.20 | 2.500                    | 0           | 126                                      | 73.3     | 174         |      |          |      |
| Surr: DNOP                  | 0.29           |      | 0.2500                   |             | 115                                      | 67.9     | 149         |      |          |      |

|                             |                 |      |                |             |           |          |           |                                |          |        |      |
|-----------------------------|-----------------|------|----------------|-------------|-----------|----------|-----------|--------------------------------|----------|--------|------|
| Sample ID                   | 1608C27-001CMSD |      |                | SampType:   | MSD       |          | TestCode: | EPA Method 8015D: Diesel Range |          |        |      |
| Client ID:                  | MW-1            |      | Batch ID:      |             | 27114     |          | RunNo:    | 36683                          |          |        |      |
| Prep Date:                  | 8/23/2016       |      | Analysis Date: |             | 8/23/2016 |          | SeqNo:    | 1136891                        |          | Units: | mg/L |
| Analyte                     | Result          | PQL  | SPK value      | SPK Ref Val | %REC      | LowLimit | HighLimit | %RPD                           | RPDLimit | Qual   |      |
| Diesel Range Organics (DRO) | 3.3             | 0.20 | 2.500          | 0           | 133       | 73.3     | 174       | 5.44                           | 20       |        |      |
| Surr: DNOP                  | 0.30            |      | 0.2500         |             | 122       | 67.9     | 149       | 0                              | 0        |        |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                             |           |                          |           |             |                                       |          |             |      |          |      |
|-----------------------------|-----------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs | SampType: LCS            |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | LCSW      | Batch ID: B36700         |           |             | RunNo: 36700                          |          |             |      |          |      |
| Prep Date:                  |           | Analysis Date: 8/23/2016 |           |             | SeqNo: 1137268                        |          | Units: µg/L |      |          |      |
| Analyte                     | Result    | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 20        | 1.0                      | 20.00     | 0           | 98.7                                  | 70       | 130         |      |          |      |
| Toluene                     | 20        | 1.0                      | 20.00     | 0           | 99.6                                  | 70       | 130         |      |          |      |
| Chlorobenzene               | 19        | 1.0                      | 20.00     | 0           | 93.6                                  | 70       | 130         |      |          |      |
| 1,1-Dichloroethene          | 20        | 1.0                      | 20.00     | 0           | 101                                   | 70       | 130         |      |          |      |
| Trichloroethene (TCE)       | 18        | 1.0                      | 20.00     | 0           | 89.0                                  | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10        |                          | 10.00     |             | 103                                   | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.9       |                          | 10.00     |             | 99.2                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.7       |                          | 10.00     |             | 97.0                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 10        |                          | 10.00     |             | 101                                   | 70       | 130         |      |          |      |

|                                |        |                          |           |             |                                       |          |             |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | rb     | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: B36700         |           |             | RunNo: 36700                          |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 8/23/2016 |           |             | SeqNo: 1137270                        |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,3,5-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Naphthalene                    | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| 1-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |          |             |      |          |      |
| 2-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |          |             |      |          |      |
| Acetone                        | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Bromobenzene                   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromodichloromethane           | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromoform                      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromomethane                   | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| 2-Butanone                     | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Carbon disulfide               | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Carbon Tetrachloride           | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chlorobenzene                  | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chloroethane                   | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| Chloroform                     | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chloromethane                  | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| 2-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                             |        |                |           |             |                             |          |           |      |          |      |
|-----------------------------|--------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID                   | rb     | SampType:      | MBLK      | TestCode:   | EPA Method 8260B: VOLATILES |          |           |      |          |      |
| Client ID:                  | PBW    | Batch ID:      | B36700    | RunNo:      | 36700                       |          |           |      |          |      |
| Prep Date:                  |        | Analysis Date: | 8/23/2016 | SeqNo:      | 1137270                     | Units:   | µg/L      |      |          |      |
| Analyte                     | Result | PQL            | SPK value | SPK Ref Val | %REC                        | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 4-Chlorotoluene             | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| cis-1,2-DCE                 | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| cis-1,3-Dichloropropene     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dibromo-3-chloropropane | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| Dibromochloromethane        | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Dibromomethane              | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,3-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,4-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Dichlorodifluoromethane     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloroethane          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloroethene          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dichloropropane         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,3-Dichloropropane         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 2,2-Dichloropropane         | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloropropene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Hexachlorobutadiene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 2-Hexanone                  | ND     | 10             |           |             |                             |          |           |      |          |      |
| Isopropylbenzene            | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 4-Isopropyltoluene          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 4-Methyl-2-pentanone        | ND     | 10             |           |             |                             |          |           |      |          |      |
| Methylene Chloride          | ND     | 3.0            |           |             |                             |          |           |      |          |      |
| n-Butylbenzene              | ND     | 3.0            |           |             |                             |          |           |      |          |      |
| n-Propylbenzene             | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| sec-Butylbenzene            | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Styrene                     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| tert-Butylbenzene           | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,2,2-Tetrachloroethane   | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| Tetrachloroethene (PCE)     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| trans-1,2-DCE               | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| trans-1,3-Dichloropropene   | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2,3-Trichlorobenzene      | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2,4-Trichlorobenzene      | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,1-Trichloroethane       | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,2-Trichloroethane       | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Trichloroethene (TCE)       | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Trichlorofluoromethane      | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2,3-Trichloropropane      | ND     | 2.0            |           |             |                             |          |           |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

**Client:** Western Refining Southwest, Inc.

**Project:** Cross Gradient Wells 8-19-16

| Sample ID <b>rb</b>         | SampType: <b>MBLK</b>           |     | TestCode: <b>EPA Method 8260B: VOLATILES</b> |             |                    |          |           |      |          |      |
|-----------------------------|---------------------------------|-----|----------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>PBW</b>       | Batch ID: <b>B36700</b>         |     | RunNo: <b>36700</b>                          |             |                    |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>8/23/2016</b> |     | SeqNo: <b>1137270</b>                        |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value                                    | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Vinyl chloride              | ND                              | 1.0 |                                              |             |                    |          |           |      |          |      |
| Xylenes, Total              | ND                              | 1.5 |                                              |             |                    |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10                              |     | 10.00                                        |             | 102                | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10                              |     | 10.00                                        |             | 99.6               | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.9                             |     | 10.00                                        |             | 98.5               | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 9.9                             |     | 10.00                                        |             | 98.8               | 70       | 130       |      |          |      |

| Sample ID <b>100ng lcs2</b> | SampType: <b>LCS</b>            |     | TestCode: <b>EPA Method 8260B: VOLATILES</b> |             |                    |          |           |      |          |      |
|-----------------------------|---------------------------------|-----|----------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>LCSW</b>      | Batch ID: <b>R36737</b>         |     | RunNo: <b>36737</b>                          |             |                    |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>8/24/2016</b> |     | SeqNo: <b>1138521</b>                        |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value                                    | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 20                              | 1.0 | 20.00                                        | 0           | 99.3               | 70       | 130       |      |          |      |
| Toluene                     | 18                              | 1.0 | 20.00                                        | 0           | 89.2               | 70       | 130       |      |          |      |
| Chlorobenzene               | 17                              | 1.0 | 20.00                                        | 0           | 84.6               | 70       | 130       |      |          |      |
| 1,1-Dichloroethene          | 20                              | 1.0 | 20.00                                        | 0           | 99.0               | 70       | 130       |      |          |      |
| Trichloroethene (TCE)       | 18                              | 1.0 | 20.00                                        | 0           | 90.4               | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 11                              |     | 10.00                                        |             | 108                | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.0                             |     | 10.00                                        |             | 90.5               | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11                              |     | 10.00                                        |             | 107                | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 9.4                             |     | 10.00                                        |             | 93.6               | 70       | 130       |      |          |      |

| Sample ID <b>rb2</b>           | SampType: <b>MBLK</b>           |     | TestCode: <b>EPA Method 8260B: VOLATILES</b> |             |                    |          |           |      |          |      |
|--------------------------------|---------------------------------|-----|----------------------------------------------|-------------|--------------------|----------|-----------|------|----------|------|
| Client ID: <b>PBW</b>          | Batch ID: <b>R36737</b>         |     | RunNo: <b>36737</b>                          |             |                    |          |           |      |          |      |
| Prep Date:                     | Analysis Date: <b>8/24/2016</b> |     | SeqNo: <b>1138522</b>                        |             | Units: <b>µg/L</b> |          |           |      |          |      |
| Analyte                        | Result                          | PQL | SPK value                                    | SPK Ref Val | %REC               | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND                              | 1.0 |                                              |             |                    |          |           |      |          |      |
| Toluene                        | ND                              | 1.0 |                                              |             |                    |          |           |      |          |      |
| Ethylbenzene                   | ND                              | 1.0 |                                              |             |                    |          |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND                              | 1.0 |                                              |             |                    |          |           |      |          |      |
| 1,2,4-Trimethylbenzene         | ND                              | 1.0 |                                              |             |                    |          |           |      |          |      |
| 1,3,5-Trimethylbenzene         | ND                              | 1.0 |                                              |             |                    |          |           |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND                              | 1.0 |                                              |             |                    |          |           |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND                              | 1.0 |                                              |             |                    |          |           |      |          |      |
| Naphthalene                    | ND                              | 2.0 |                                              |             |                    |          |           |      |          |      |
| 1-Methylnaphthalene            | ND                              | 4.0 |                                              |             |                    |          |           |      |          |      |
| 2-Methylnaphthalene            | ND                              | 4.0 |                                              |             |                    |          |           |      |          |      |
| Acetone                        | ND                              | 10  |                                              |             |                    |          |           |      |          |      |
| Bromobenzene                   | ND                              | 1.0 |                                              |             |                    |          |           |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                             |        |                |           |             |                             |          |           |      |          |      |
|-----------------------------|--------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID                   | rb2    | SampType:      | MBLK      | TestCode:   | EPA Method 8260B: VOLATILES |          |           |      |          |      |
| Client ID:                  | PBW    | Batch ID:      | R36737    | RunNo:      | 36737                       |          |           |      |          |      |
| Prep Date:                  |        | Analysis Date: | 8/24/2016 | SeqNo:      | 1138522                     | Units:   | µg/L      |      |          |      |
| Analyte                     | Result | PQL            | SPK value | SPK Ref Val | %REC                        | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Bromodichloromethane        | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Bromoform                   | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Bromomethane                | ND     | 3.0            |           |             |                             |          |           |      |          |      |
| 2-Butanone                  | ND     | 10             |           |             |                             |          |           |      |          |      |
| Carbon disulfide            | ND     | 10             |           |             |                             |          |           |      |          |      |
| Carbon Tetrachloride        | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Chlorobenzene               | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Chloroethane                | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| Chloroform                  | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Chloromethane               | ND     | 3.0            |           |             |                             |          |           |      |          |      |
| 2-Chlorotoluene             | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 4-Chlorotoluene             | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| cis-1,2-DCE                 | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| cis-1,3-Dichloropropene     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dibromo-3-chloropropane | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| Dibromochloromethane        | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Dibromomethane              | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,3-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,4-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Dichlorodifluoromethane     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloroethane          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloroethene          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dichloropropane         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,3-Dichloropropane         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 2,2-Dichloropropane         | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloropropene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Hexachlorobutadiene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 2-Hexanone                  | ND     | 10             |           |             |                             |          |           |      |          |      |
| Isopropylbenzene            | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 4-Isopropyltoluene          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 4-Methyl-2-pentanone        | ND     | 10             |           |             |                             |          |           |      |          |      |
| Methylene Chloride          | ND     | 3.0            |           |             |                             |          |           |      |          |      |
| n-Butylbenzene              | ND     | 3.0            |           |             |                             |          |           |      |          |      |
| n-Propylbenzene             | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| sec-Butylbenzene            | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Styrene                     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| tert-Butylbenzene           | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND     | 1.0            |           |             |                             |          |           |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                             |                                 |     |           |                                              |      |                    |           |      |          |      |
|-----------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Sample ID <b>rb2</b>        | SampType: <b>MBLK</b>           |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
| Client ID: <b>PBW</b>       | Batch ID: <b>R36737</b>         |     |           | RunNo: <b>36737</b>                          |      |                    |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>8/24/2016</b> |     |           | SeqNo: <b>1138522</b>                        |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| 1,1,2,2-Tetrachloroethane   | ND                              | 2.0 |           |                                              |      |                    |           |      |          |      |
| Tetrachloroethene (PCE)     | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| trans-1,2-DCE               | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| trans-1,3-Dichloropropene   | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,2,3-Trichlorobenzene      | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,2,4-Trichlorobenzene      | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,1,1-Trichloroethane       | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,1,2-Trichloroethane       | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| Trichloroethene (TCE)       | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| Trichlorofluoromethane      | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,2,3-Trichloropropane      | ND                              | 2.0 |           |                                              |      |                    |           |      |          |      |
| Vinyl chloride              | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| Xylenes, Total              | ND                              | 1.5 |           |                                              |      |                    |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.9                             |     | 10.00     |                                              | 99.2 | 70                 | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10                              |     | 10.00     |                                              | 101  | 70                 | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.5                             |     | 10.00     |                                              | 94.7 | 70                 | 130       |      |          |      |
| Surr: Toluene-d8            | 9.7                             |     | 10.00     |                                              | 96.9 | 70                 | 130       |      |          |      |

|                                 |                                 |     |           |                                              |      |                    |           |      |          |      |
|---------------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Sample ID <b>1608c27-001ams</b> | SampType: <b>MS</b>             |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
| Client ID: <b>MW-1</b>          | Batch ID: <b>B36700</b>         |     |           | RunNo: <b>36737</b>                          |      |                    |           |      |          |      |
| Prep Date:                      | Analysis Date: <b>8/24/2016</b> |     |           | SeqNo: <b>1138624</b>                        |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                         | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                         | 19                              | 1.0 | 20.00     | 0                                            | 97.2 | 70                 | 130       |      |          |      |
| Toluene                         | 18                              | 1.0 | 20.00     | 0                                            | 88.2 | 70                 | 130       |      |          |      |
| Chlorobenzene                   | 18                              | 1.0 | 20.00     | 0                                            | 87.6 | 70                 | 130       |      |          |      |
| 1,1-Dichloroethene              | 19                              | 1.0 | 20.00     | 0                                            | 92.7 | 70                 | 130       |      |          |      |
| Trichloroethene (TCE)           | 16                              | 1.0 | 20.00     | 0                                            | 82.1 | 70                 | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4     | 9.8                             |     | 10.00     |                                              | 98.2 | 70                 | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene      | 10                              |     | 10.00     |                                              | 102  | 70                 | 130       |      |          |      |
| Surr: Dibromofluoromethane      | 9.2                             |     | 10.00     |                                              | 91.9 | 70                 | 130       |      |          |      |
| Surr: Toluene-d8                | 9.5                             |     | 10.00     |                                              | 95.4 | 70                 | 130       |      |          |      |

|                                  |                                 |     |           |                                              |      |                    |           |      |          |      |
|----------------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Sample ID <b>1608c27-001amsd</b> | SampType: <b>MSD</b>            |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
| Client ID: <b>MW-1</b>           | Batch ID: <b>B36700</b>         |     |           | RunNo: <b>36737</b>                          |      |                    |           |      |          |      |
| Prep Date:                       | Analysis Date: <b>8/24/2016</b> |     |           | SeqNo: <b>1138625</b>                        |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                          | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                          | 18                              | 1.0 | 20.00     | 0                                            | 90.3 | 70                 | 130       | 7.34 | 20       |      |
| Toluene                          | 17                              | 1.0 | 20.00     | 0                                            | 85.9 | 70                 | 130       | 2.63 | 20       |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                             |                 |     |                          |             |                                       |          |             |      |          |      |
|-----------------------------|-----------------|-----|--------------------------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1608c27-001amsd |     | SampType: MSD            |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | MW-1            |     | Batch ID: B36700         |             | RunNo: 36737                          |          |             |      |          |      |
| Prep Date:                  |                 |     | Analysis Date: 8/24/2016 |             | SeqNo: 1138625                        |          | Units: µg/L |      |          |      |
| Analyte                     | Result          | PQL | SPK value                | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Chlorobenzene               | 17              | 1.0 | 20.00                    | 0           | 82.7                                  | 70       | 130         | 5.79 | 20       |      |
| 1,1-Dichloroethene          | 17              | 1.0 | 20.00                    | 0           | 85.8                                  | 70       | 130         | 7.64 | 20       |      |
| Trichloroethene (TCE)       | 16              | 1.0 | 20.00                    | 0           | 80.0                                  | 70       | 130         | 2.58 | 20       |      |
| Surr: 1,2-Dichloroethane-d4 | 9.7             |     | 10.00                    |             | 96.7                                  | 70       | 130         | 0    | 0        |      |
| Surr: 4-Bromofluorobenzene  | 10              |     | 10.00                    |             | 101                                   | 70       | 130         | 0    | 0        |      |
| Surr: Dibromofluoromethane  | 9.2             |     | 10.00                    |             | 91.5                                  | 70       | 130         | 0    | 0        |      |
| Surr: Toluene-d8            | 9.5             |     | 10.00                    |             | 95.1                                  | 70       | 130         | 0    | 0        |      |

|                             |                |     |                          |             |                                       |          |             |      |          |      |
|-----------------------------|----------------|-----|--------------------------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1608c27-002ams |     | SampType: MS             |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | Field Blank    |     | Batch ID: R36737         |             | RunNo: 36737                          |          |             |      |          |      |
| Prep Date:                  |                |     | Analysis Date: 8/24/2016 |             | SeqNo: 1138627                        |          | Units: µg/L |      |          |      |
| Analyte                     | Result         | PQL | SPK value                | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 19             | 1.0 | 20.00                    | 0           | 94.7                                  | 70       | 130         |      |          |      |
| Toluene                     | 18             | 1.0 | 20.00                    | 0           | 92.5                                  | 70       | 130         |      |          |      |
| Chlorobenzene               | 18             | 1.0 | 20.00                    | 0.1294      | 89.0                                  | 70       | 130         |      |          |      |
| 1,1-Dichloroethene          | 19             | 1.0 | 20.00                    | 0           | 93.6                                  | 70       | 130         |      |          |      |
| Trichloroethene (TCE)       | 17             | 1.0 | 20.00                    | 0           | 85.1                                  | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10             |     | 10.00                    |             | 100                                   | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10             |     | 10.00                    |             | 101                                   | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.4            |     | 10.00                    |             | 93.7                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.5            |     | 10.00                    |             | 95.5                                  | 70       | 130         |      |          |      |

|                             |                 |     |                          |             |                                       |          |             |        |          |      |
|-----------------------------|-----------------|-----|--------------------------|-------------|---------------------------------------|----------|-------------|--------|----------|------|
| Sample ID                   | 1608c27-002amsd |     | SampType: MSD            |             | TestCode: EPA Method 8260B: VOLATILES |          |             |        |          |      |
| Client ID:                  | Field Blank     |     | Batch ID: R36737         |             | RunNo: 36737                          |          |             |        |          |      |
| Prep Date:                  |                 |     | Analysis Date: 8/24/2016 |             | SeqNo: 1138628                        |          | Units: µg/L |        |          |      |
| Analyte                     | Result          | PQL | SPK value                | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD   | RPDLimit | Qual |
| Benzene                     | 19              | 1.0 | 20.00                    | 0           | 93.1                                  | 70       | 130         | 1.70   | 20       |      |
| Toluene                     | 18              | 1.0 | 20.00                    | 0           | 91.2                                  | 70       | 130         | 1.38   | 20       |      |
| Chlorobenzene               | 17              | 1.0 | 20.00                    | 0.1294      | 86.6                                  | 70       | 130         | 2.67   | 20       |      |
| 1,1-Dichloroethene          | 18              | 1.0 | 20.00                    | 0           | 89.4                                  | 70       | 130         | 4.54   | 20       |      |
| Trichloroethene (TCE)       | 17              | 1.0 | 20.00                    | 0           | 85.2                                  | 70       | 130         | 0.0599 | 20       |      |
| Surr: 1,2-Dichloroethane-d4 | 9.8             |     | 10.00                    |             | 97.6                                  | 70       | 130         | 0      | 0        |      |
| Surr: 4-Bromofluorobenzene  | 10              |     | 10.00                    |             | 101                                   | 70       | 130         | 0      | 0        |      |
| Surr: Dibromofluoromethane  | 9.9             |     | 10.00                    |             | 98.9                                  | 70       | 130         | 0      | 0        |      |
| Surr: Toluene-d8            | 9.7             |     | 10.00                    |             | 97.2                                  | 70       | 130         | 0      | 0        |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                             |           |     |                          |             |                                       |          |             |      |          |      |
|-----------------------------|-----------|-----|--------------------------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs |     | SampType: LCS            |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | LCSW      |     | Batch ID: W36763         |             | RunNo: 36763                          |          |             |      |          |      |
| Prep Date:                  |           |     | Analysis Date: 8/25/2016 |             | SeqNo: 1140132                        |          | Units: µg/L |      |          |      |
| Analyte                     | Result    | PQL | SPK value                | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 20        | 1.0 | 20.00                    | 0           | 99.6                                  | 70       | 130         |      |          |      |
| Toluene                     | 19        | 1.0 | 20.00                    | 0           | 95.8                                  | 70       | 130         |      |          |      |
| Chlorobenzene               | 18        | 1.0 | 20.00                    | 0           | 90.6                                  | 70       | 130         |      |          |      |
| 1,1-Dichloroethene          | 20        | 1.0 | 20.00                    | 0           | 101                                   | 70       | 130         |      |          |      |
| Trichloroethene (TCE)       | 18        | 1.0 | 20.00                    | 0           | 89.8                                  | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10        |     | 10.00                    |             | 101                                   | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.7       |     | 10.00                    |             | 96.8                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.7       |     | 10.00                    |             | 97.1                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.8       |     | 10.00                    |             | 98.0                                  | 70       | 130         |      |          |      |

|                                |        |                          |           |             |                                       |          |             |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | rb3    | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: W36763         |           |             | RunNo: 36763                          |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 8/25/2016 |           |             | SeqNo: 1140133                        |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,3,5-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Naphthalene                    | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| 1-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |          |             |      |          |      |
| 2-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |          |             |      |          |      |
| Acetone                        | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Bromobenzene                   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromodichloromethane           | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromoform                      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromomethane                   | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| 2-Butanone                     | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Carbon disulfide               | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Carbon Tetrachloride           | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chlorobenzene                  | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chloroethane                   | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| Chloroform                     | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chloromethane                  | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| 2-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                             |        |                |           |             |                             |          |           |      |          |      |
|-----------------------------|--------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID                   | rb3    | SampType:      | MBLK      | TestCode:   | EPA Method 8260B: VOLATILES |          |           |      |          |      |
| Client ID:                  | PBW    | Batch ID:      | W36763    | RunNo:      | 36763                       |          |           |      |          |      |
| Prep Date:                  |        | Analysis Date: | 8/25/2016 | SeqNo:      | 1140133                     | Units:   | µg/L      |      |          |      |
| Analyte                     | Result | PQL            | SPK value | SPK Ref Val | %REC                        | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 4-Chlorotoluene             | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| cis-1,2-DCE                 | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| cis-1,3-Dichloropropene     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dibromo-3-chloropropane | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| Dibromochloromethane        | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Dibromomethane              | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,3-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,4-Dichlorobenzene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Dichlorodifluoromethane     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloroethane          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloroethene          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2-Dichloropropane         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,3-Dichloropropane         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 2,2-Dichloropropane         | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| 1,1-Dichloropropene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Hexachlorobutadiene         | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 2-Hexanone                  | ND     | 10             |           |             |                             |          |           |      |          |      |
| Isopropylbenzene            | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 4-Isopropyltoluene          | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 4-Methyl-2-pentanone        | ND     | 10             |           |             |                             |          |           |      |          |      |
| Methylene Chloride          | ND     | 3.0            |           |             |                             |          |           |      |          |      |
| n-Butylbenzene              | ND     | 3.0            |           |             |                             |          |           |      |          |      |
| n-Propylbenzene             | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| sec-Butylbenzene            | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Styrene                     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| tert-Butylbenzene           | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,2,2-Tetrachloroethane   | ND     | 2.0            |           |             |                             |          |           |      |          |      |
| Tetrachloroethene (PCE)     | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| trans-1,2-DCE               | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| trans-1,3-Dichloropropene   | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2,3-Trichlorobenzene      | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2,4-Trichlorobenzene      | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,1-Trichloroethane       | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,1,2-Trichloroethane       | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Trichloroethene (TCE)       | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Trichlorofluoromethane      | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| 1,2,3-Trichloropropane      | ND     | 2.0            |           |             |                             |          |           |      |          |      |

### Qualifiers:

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R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                             |        |                |           |             |                             |          |           |      |          |      |
|-----------------------------|--------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID                   | rb3    | SampType:      | MBLK      | TestCode:   | EPA Method 8260B: VOLATILES |          |           |      |          |      |
| Client ID:                  | PBW    | Batch ID:      | W36763    | RunNo:      | 36763                       |          |           |      |          |      |
| Prep Date:                  |        | Analysis Date: | 8/25/2016 | SeqNo:      | 1140133                     | Units:   | µg/L      |      |          |      |
| Analyte                     | Result | PQL            | SPK value | SPK Ref Val | %REC                        | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Vinyl chloride              | ND     | 1.0            |           |             |                             |          |           |      |          |      |
| Xylenes, Total              | ND     | 1.5            |           |             |                             |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.9    |                | 10.00     |             | 99.1                        | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.8    |                | 10.00     |             | 98.4                        | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 10     |                | 10.00     |             | 102                         | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 10     |                | 10.00     |             | 101                         | 70       | 130       |      |          |      |

### Qualifiers:

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D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|            |           |         |                |             |      |           |                          |      |             |      |  |
|------------|-----------|---------|----------------|-------------|------|-----------|--------------------------|------|-------------|------|--|
| Sample ID  | MB-27283  |         | SampType:      | MBLK        |      | TestCode: | EPA Method 7470: Mercury |      |             |      |  |
| Client ID: | PBW       |         | Batch ID:      | 27283       |      | RunNo:    | 36941                    |      |             |      |  |
| Prep Date: | 8/31/2016 |         | Analysis Date: | 9/1/2016    |      | SeqNo:    | 1144815                  |      | Units: mg/L |      |  |
| Analyte    | Result    | PQL     | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                | %RPD | RPDLimit    | Qual |  |
| Mercury    | ND        | 0.00020 |                |             |      |           |                          |      |             |      |  |

|            |           |         |           |                |          |          |           |                          |          |        |      |
|------------|-----------|---------|-----------|----------------|----------|----------|-----------|--------------------------|----------|--------|------|
| Sample ID  | LCS-27283 |         |           | SampType:      | LCS      |          | TestCode: | EPA Method 7470: Mercury |          |        |      |
| Client ID: | LCSW      |         |           | Batch ID:      | 27283    |          | RunNo:    | 36941                    |          |        |      |
| Prep Date: | 8/31/2016 |         |           | Analysis Date: | 9/1/2016 |          | SeqNo:    | 1144816                  |          | Units: | mg/L |
| Analyte    | Result    | PQL     | SPK value | SPK Ref Val    | %REC     | LowLimit | HighLimit | %RPD                     | RPDLimit | Qual   |      |
| Mercury    | 0.0049    | 0.00020 | 0.005000  | 0              | 98.4     | 80       | 120       |                          |          |        |      |

|            |                |         |                         |             |                                    |          |             |      |          |      |
|------------|----------------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | 1608C27-001EMS |         | SampType: MS            |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | MW-1           |         | Batch ID: 27283         |             | RunNo: 36941                       |          |             |      |          |      |
| Prep Date: | 8/31/2016      |         | Analysis Date: 9/1/2016 |             | SeqNo: 1144818                     |          | Units: mg/L |      |          |      |
| Analyte    | Result         | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0058         | 0.00020 | 0.005000                | 0.0001634   | 112                                | 75       | 125         |      |          |      |

|            |                 |         |                |             |      |           |                          |      |             |      |  |
|------------|-----------------|---------|----------------|-------------|------|-----------|--------------------------|------|-------------|------|--|
| Sample ID  | 1608C27-001EMSD |         | SampType:      | MSD         |      | TestCode: | EPA Method 7470: Mercury |      |             |      |  |
| Client ID: | MW-1            |         | Batch ID:      | 27283       |      | RunNo:    | 36941                    |      |             |      |  |
| Prep Date: | 8/31/2016       |         | Analysis Date: | 9/1/2016    |      | SeqNo:    | 1144819                  |      | Units: mg/L |      |  |
| Analyte    | Result          | PQL     | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                | %RPD | RPDLimit    | Qual |  |
| Mercury    | 0.0057          | 0.00020 | 0.005000       | 0.0001634   | 111  | 75        | 125                      | 1.08 | 20          |      |  |

### Qualifiers:

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S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|            |             |                |                 |           |                                           |        |             |  |  |  |
|------------|-------------|----------------|-----------------|-----------|-------------------------------------------|--------|-------------|--|--|--|
| Sample ID  | <b>MB-B</b> | SampType:      | <b>MBLK</b>     | TestCode: | <b>EPA Method 6010B: Dissolved Metals</b> |        |             |  |  |  |
| Client ID: | <b>PBW</b>  | Batch ID:      | <b>B37036</b>   | RunNo:    | <b>37036</b>                              |        |             |  |  |  |
| Prep Date: |             | Analysis Date: | <b>9/7/2016</b> | SeqNo:    | <b>1147839</b>                            | Units: | <b>mg/L</b> |  |  |  |

| Analyte   | Result | PQL    | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|-----------|--------|--------|-----------|-------------|------|----------|-----------|------|----------|------|
| Arsenic   | ND     | 0.020  |           |             |      |          |           |      |          |      |
| Barium    | ND     | 0.020  |           |             |      |          |           |      |          |      |
| Cadmium   | ND     | 0.0020 |           |             |      |          |           |      |          |      |
| Calcium   | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Chromium  | ND     | 0.0060 |           |             |      |          |           |      |          |      |
| Copper    | ND     | 0.0060 |           |             |      |          |           |      |          |      |
| Iron      | ND     | 0.020  |           |             |      |          |           |      |          |      |
| Lead      | ND     | 0.0050 |           |             |      |          |           |      |          |      |
| Magnesium | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Manganese | ND     | 0.0020 |           |             |      |          |           |      |          |      |
| Potassium | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Selenium  | ND     | 0.050  |           |             |      |          |           |      |          |      |
| Silver    | ND     | 0.0050 |           |             |      |          |           |      |          |      |
| Sodium    | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Zinc      | ND     | 0.020  |           |             |      |          |           |      |          |      |

|            |              |                |                 |           |                                           |        |             |  |  |  |
|------------|--------------|----------------|-----------------|-----------|-------------------------------------------|--------|-------------|--|--|--|
| Sample ID  | <b>LCS-B</b> | SampType:      | <b>LCS</b>      | TestCode: | <b>EPA Method 6010B: Dissolved Metals</b> |        |             |  |  |  |
| Client ID: | <b>LCSW</b>  | Batch ID:      | <b>B37036</b>   | RunNo:    | <b>37036</b>                              |        |             |  |  |  |
| Prep Date: |              | Analysis Date: | <b>9/7/2016</b> | SeqNo:    | <b>1147840</b>                            | Units: | <b>mg/L</b> |  |  |  |

| Analyte   | Result | PQL    | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|-----------|--------|--------|-----------|-------------|------|----------|-----------|------|----------|------|
| Arsenic   | 0.47   | 0.020  | 0.5000    | 0           | 94.4 | 80       | 120       |      |          |      |
| Barium    | 0.46   | 0.020  | 0.5000    | 0           | 92.1 | 80       | 120       |      |          |      |
| Cadmium   | 0.47   | 0.0020 | 0.5000    | 0           | 93.7 | 80       | 120       |      |          |      |
| Calcium   | 57     | 1.0    | 50.00     | 0           | 114  | 80       | 120       |      |          |      |
| Chromium  | 0.46   | 0.0060 | 0.5000    | 0           | 92.1 | 80       | 120       |      |          |      |
| Copper    | 0.45   | 0.0060 | 0.5000    | 0           | 90.9 | 80       | 120       |      |          |      |
| Iron      | 0.47   | 0.020  | 0.5000    | 0           | 93.2 | 80       | 120       |      |          |      |
| Lead      | 0.46   | 0.0050 | 0.5000    | 0           | 91.2 | 80       | 120       |      |          |      |
| Magnesium | 58     | 1.0    | 50.00     | 0           | 116  | 80       | 120       |      |          |      |
| Manganese | 0.45   | 0.0020 | 0.5000    | 0           | 90.2 | 80       | 120       |      |          |      |
| Potassium | 56     | 1.0    | 50.00     | 0           | 112  | 80       | 120       |      |          |      |
| Selenium  | 0.46   | 0.050  | 0.5000    | 0           | 93.0 | 80       | 120       |      |          |      |
| Silver    | 0.095  | 0.0050 | 0.1000    | 0           | 95.0 | 80       | 120       |      |          |      |
| Sodium    | 57     | 1.0    | 50.00     | 0           | 114  | 80       | 120       |      |          |      |
| Zinc      | 0.46   | 0.020  | 0.5000    | 0           | 91.7 | 80       | 120       |      |          |      |

### Qualifiers:

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W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|            |        |                |           |             |           |                                    |           |        |          |      |
|------------|--------|----------------|-----------|-------------|-----------|------------------------------------|-----------|--------|----------|------|
| Sample ID  | MB-B   | SampType:      | MBLK      |             | TestCode: | EPA Method 6010B: Dissolved Metals |           |        |          |      |
| Client ID: | PBW    | Batch ID:      | B37126    |             | RunNo:    | 37126                              |           |        |          |      |
| Prep Date: |        | Analysis Date: | 9/12/2016 |             | SeqNo:    | 1151181                            |           | Units: | mg/L     |      |
| Analyte    | Result | PQL            | SPK value | SPK Ref Val | %REC      | LowLimit                           | HighLimit | %RPD   | RPDLimit | Qual |
| Calcium    | ND     | 1.0            |           |             |           |                                    |           |        |          |      |
| Sodium     | ND     | 1.0            |           |             |           |                                    |           |        |          |      |
| Uranium    | ND     | 0.10           |           |             |           |                                    |           |        |          |      |

|            |        |      |                          |             |                                              |          |             |      |          |      |
|------------|--------|------|--------------------------|-------------|----------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-B  |      | SampType: LCS            |             | TestCode: EPA Method 6010B: Dissolved Metals |          |             |      |          |      |
| Client ID: | LCSW   |      | Batch ID: B37126         |             | RunNo: 37126                                 |          |             |      |          |      |
| Prep Date: |        |      | Analysis Date: 9/12/2016 |             | SeqNo: 1151182                               |          | Units: mg/L |      |          |      |
| Analyte    | Result | PQL  | SPK value                | SPK Ref Val | %REC                                         | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Calcium    | 51     | 1.0  | 50.00                    | 0           | 101                                          | 80       | 120         |      |          |      |
| Sodium     | 50     | 1.0  | 50.00                    | 0           | 100                                          | 80       | 120         |      |          |      |
| Uranium    | 0.51   | 0.10 | 0.5000                   | 0           | 101                                          | 80       | 120         |      |          |      |

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|            |                  |        |                |                  |      |           |                                            |        |             |      |
|------------|------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>MB-27124</b>  |        | SampType:      | <b>MBLK</b>      |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>PBW</b>       |        | Batch ID:      | <b>27124</b>     |      | RunNo:    | <b>36757</b>                               |        |             |      |
| Prep Date: | <b>8/23/2016</b> |        | Analysis Date: | <b>8/25/2016</b> |      | SeqNo:    | <b>1139271</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | ND               | 0.020  |                |                  |      |           |                                            |        |             |      |
| Barium     | ND               | 0.020  |                |                  |      |           |                                            |        |             |      |
| Cadmium    | ND               | 0.0020 |                |                  |      |           |                                            |        |             |      |
| Chromium   | ND               | 0.0060 |                |                  |      |           |                                            |        |             |      |
| Lead       | ND               | 0.0050 |                |                  |      |           |                                            |        |             |      |
| Selenium   | ND               | 0.050  |                |                  |      |           |                                            |        |             |      |
| Silver     | ND               | 0.0050 |                |                  |      |           |                                            |        |             |      |

|            |                  |        |                |                  |      |           |                                            |        |             |      |
|------------|------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>LCS-27124</b> |        | SampType:      | <b>LCS</b>       |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>LCSW</b>      |        | Batch ID:      | <b>27124</b>     |      | RunNo:    | <b>36757</b>                               |        |             |      |
| Prep Date: | <b>8/23/2016</b> |        | Analysis Date: | <b>8/25/2016</b> |      | SeqNo:    | <b>1139272</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | 0.50             | 0.020  | 0.5000         | 0                | 100  | 80        | 120                                        |        |             |      |
| Barium     | 0.48             | 0.020  | 0.5000         | 0                | 96.6 | 80        | 120                                        |        |             |      |
| Cadmium    | 0.49             | 0.0020 | 0.5000         | 0                | 97.7 | 80        | 120                                        |        |             |      |
| Chromium   | 0.48             | 0.0060 | 0.5000         | 0                | 96.6 | 80        | 120                                        |        |             |      |
| Lead       | 0.47             | 0.0050 | 0.5000         | 0                | 94.2 | 80        | 120                                        |        |             |      |
| Selenium   | 0.48             | 0.050  | 0.5000         | 0                | 95.2 | 80        | 120                                        |        |             |      |
| Silver     | 0.10             | 0.0050 | 0.1000         | 0                | 100  | 80        | 120                                        |        |             |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                               |               |       |                          |             |                                            |          |             |      |          |      |
|-------------------------------|---------------|-------|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 2.5ug gro lcs |       | SampType: LCS            |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | LCSW          |       | Batch ID: R36700         |             | RunNo: 36700                               |          |             |      |          |      |
| Prep Date:                    |               |       | Analysis Date: 8/23/2016 |             | SeqNo: 1137274                             |          | Units: mg/L |      |          |      |
| Analyte                       | Result        | PQL   | SPK value                | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.41          | 0.050 | 0.5000                   | 0           | 82.5                                       | 75.4     | 118         |      |          |      |
| Surr: BFB                     | 10            |       | 10.00                    |             | 101                                        | 70       | 130         |      |          |      |

|                               |        |                          |           |             |                                            |          |             |      |          |      |
|-------------------------------|--------|--------------------------|-----------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | rb     | SampType: MBLK           |           |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | PBW    | Batch ID: R36700         |           |             | RunNo: 36700                               |          |             |      |          |      |
| Prep Date:                    |        | Analysis Date: 8/23/2016 |           |             | SeqNo: 1137275                             |          | 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                     | 9.8    |                          | 10.00     |             | 98.1                                       | 70       | 130         |      |          |      |

|                               |               |                          |           |             |                                            |          |             |      |          |      |
|-------------------------------|---------------|--------------------------|-----------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | 2.5ug gro lcs | SampType: LCS            |           |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | LCSW          | Batch ID: G36737         |           |             | RunNo: 36737                               |          |             |      |          |      |
| Prep Date:                    |               | Analysis Date: 8/24/2016 |           |             | SeqNo: 1138526                             |          | Units: mg/L |      |          |      |
| Analyte                       | Result        | PQL                      | SPK value | SPK Ref Val | %REC                                       | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.40          | 0.050                    | 0.5000    | 0           | 79.1                                       | 75.4     | 118         |      |          |      |
| Surr: BFB                     | 9.9           |                          | 10.00     |             | 99.0                                       | 70       | 130         |      |          |      |

|                               |        |                          |           |             |                                            |          |             |      |          |      |
|-------------------------------|--------|--------------------------|-----------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                     | rb2    | SampType: MBLK           |           |             | TestCode: EPA Method 8015D: Gasoline Range |          |             |      |          |      |
| Client ID:                    | PBW    | Batch ID: G36737         |           |             | RunNo: 36737                               |          |             |      |          |      |
| Prep Date:                    |        | Analysis Date: 8/24/2016 |           |             | SeqNo: 1138527                             |          | 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                     | 9.9    |                          | 10.00     |             | 98.7                                       | 70       | 130         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C27

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-16

|                             |        |       |                |             |      |           |                     |      |          |            |  |
|-----------------------------|--------|-------|----------------|-------------|------|-----------|---------------------|------|----------|------------|--|
| Sample ID                   | mb-1   |       | SampType:      | mblk        |      | TestCode: | SM2320B: Alkalinity |      |          |            |  |
| Client ID:                  | PBW    |       | Batch ID:      | R36738      |      | RunNo:    | 36738               |      |          |            |  |
| Prep Date:                  |        |       | Analysis Date: | 8/24/2016   |      | SeqNo:    | 1138449             |      | Units:   | mg/L CaCO3 |  |
| Analyte                     | Result | PQL   | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit           | %RPD | RPDLimit | Qual       |  |
| Total Alkalinity (as CaCO3) | ND     | 20.00 |                |             |      |           |                     |      |          |            |  |

|                             |        |       |                          |             |                               |          |                   |      |          |      |
|-----------------------------|--------|-------|--------------------------|-------------|-------------------------------|----------|-------------------|------|----------|------|
| Sample ID                   | Ics-1  |       | SampType: Ics            |             | TestCode: SM2320B: Alkalinity |          |                   |      |          |      |
| Client ID:                  | LCSW   |       | Batch ID: R36738         |             | RunNo: 36738                  |          |                   |      |          |      |
| Prep Date:                  |        |       | Analysis Date: 8/24/2016 |             | SeqNo: 1138450                |          | Units: mg/L CaCO3 |      |          |      |
| Analyte                     | Result | PQL   | SPK value                | SPK Ref Val | %REC                          | LowLimit | HighLimit         | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 78.72  | 20.00 | 80.00                    | 0           | 98.4                          | 90       | 110               |      |          |      |

|                             |        |       |                |             |      |           |                     |      |          |            |  |
|-----------------------------|--------|-------|----------------|-------------|------|-----------|---------------------|------|----------|------------|--|
| Sample ID                   | mb-2   |       | SampType:      | mblk        |      | TestCode: | SM2320B: Alkalinity |      |          |            |  |
| Client ID:                  | PBW    |       | Batch ID:      | R36738      |      | RunNo:    | 36738               |      |          |            |  |
| Prep Date:                  |        |       | Analysis Date: | 8/24/2016   |      | SeqNo:    | 1138474             |      | Units:   | mg/L CaCO3 |  |
| Analyte                     | Result | PQL   | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit           | %RPD | RPDLimit | Qual       |  |
| Total Alkalinity (as CaCO3) | ND     | 20.00 |                |             |      |           |                     |      |          |            |  |

|                             |        |       |                          |             |                               |          |                   |      |          |      |
|-----------------------------|--------|-------|--------------------------|-------------|-------------------------------|----------|-------------------|------|----------|------|
| Sample ID                   | Ics-2  |       | SampType: Ics            |             | TestCode: SM2320B: Alkalinity |          |                   |      |          |      |
| Client ID:                  | LCSW   |       | Batch ID: R36738         |             | RunNo: 36738                  |          |                   |      |          |      |
| Prep Date:                  |        |       | Analysis Date: 8/24/2016 |             | SeqNo: 1138475                |          | Units: mg/L CaCO3 |      |          |      |
| Analyte                     | Result | PQL   | SPK value                | SPK Ref Val | %REC                          | LowLimit | HighLimit         | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 79.16  | 20.00 | 80.00                    | 0           | 99.0                          | 90       | 110               |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



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

## Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1608C27**

RcptNo: 1

Received by/date:

Logged By: **Lindsay Mangin**

**08/20/16**  
8/20/2016 9:15:00 AM

Completed By: **Lindsay Mangin**

8/22/2016 10:11:28 AM

Reviewed By:

**JC 08/22/16**

*Lindsay Mangin*  
*Lindsay Mangin*

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: **18**  
Adjusted? **No**  
Checked by: **AS**

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 3.8                     | Good      | Yes         |         |           |           |





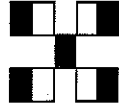




| Chain-of-Custody Record                                                                                                                                                                                           |       |                  |                   |                      |                                |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------|-------------------|----------------------|--------------------------------|----------|
| Client: Western Refining                                                                                                                                                                                          |       |                  |                   |                      |                                |          |
| Mailing Address: 50 CR 4990<br>Bloomfield, NM 87413<br>Phone #: 505-632-4135<br>email or Fax#:                                                                                                                    |       |                  |                   |                      |                                |          |
| QA/QC Package:<br><input type="checkbox"/> Standard <input checked="" type="checkbox"/> Level 4 (Full Validation)<br><input type="checkbox"/> Other _____<br><input checked="" type="checkbox"/> EDD (Type) _____ |       |                  |                   |                      |                                |          |
| Turn-Around Time: _____                                                                                                                                                                                           |       |                  |                   |                      |                                |          |
| <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush                                                                                                                                        |       |                  |                   |                      |                                |          |
| Project Name: Cross Gradient Wells                                                                                                                                                                                |       |                  |                   |                      |                                |          |
| Date: 8-19-2016                                                                                                                                                                                                   |       |                  |                   |                      |                                |          |
| Project #: Annual                                                                                                                                                                                                 |       |                  |                   |                      |                                |          |
| PO#12615520                                                                                                                                                                                                       |       |                  |                   |                      |                                |          |
| Project Manager:                                                                                                                                                                                                  |       |                  |                   |                      |                                |          |
| Sampler: Michael A Wicker                                                                                                                                                                                         |       |                  |                   |                      |                                |          |
| On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                                                                                                                                       |       |                  |                   |                      |                                |          |
| Sample Temperature: 3.8                                                                                                                                                                                           |       |                  |                   |                      |                                |          |
| Date                                                                                                                                                                                                              | Time  | Matrix           | Sample Request ID | Container Type and # | Preservative Type              | HEAL No. |
| 8-19-16                                                                                                                                                                                                           | 0820  | H <sub>2</sub> O | MW-33             | 6-VOA                | HCl                            | -007     |
|                                                                                                                                                                                                                   |       |                  | MW-33             | 1-500 ml Amber       | Cool                           | -007     |
|                                                                                                                                                                                                                   |       |                  | MW-33             | 1-500 ml             | HNO <sub>3</sub>               | -007     |
|                                                                                                                                                                                                                   |       |                  | MW-33             | 1-250 ml             | HNO <sub>3</sub>               | -007     |
|                                                                                                                                                                                                                   |       |                  | MW-33             | 1-500 ml             |                                | -007     |
|                                                                                                                                                                                                                   |       |                  | MW-33 filter      | 1-250 ml             | H <sub>2</sub> SO <sub>4</sub> | -007     |
|                                                                                                                                                                                                                   |       |                  | TRIP Blank        |                      |                                |          |
|                                                                                                                                                                                                                   |       |                  | AS 8122-116       |                      |                                |          |
|                                                                                                                                                                                                                   |       |                  |                   |                      |                                |          |
|                                                                                                                                                                                                                   |       |                  |                   |                      |                                |          |
|                                                                                                                                                                                                                   |       |                  |                   |                      |                                |          |
|                                                                                                                                                                                                                   |       |                  |                   |                      |                                |          |
|                                                                                                                                                                                                                   |       |                  |                   |                      |                                |          |
| Date:                                                                                                                                                                                                             | Time: | Relinquished by: | Date:             | Time                 |                                |          |
| 8-19-16                                                                                                                                                                                                           | 1545  | [Signature]      | 8-19-16           | 1545                 |                                |          |
| Date:                                                                                                                                                                                                             | Time: | Relinquished by: | Date:             | Time                 |                                |          |
| 8-19-16                                                                                                                                                                                                           | 1740  | [Signature]      | 8-19-16           | 0915                 |                                |          |

| Turn-Around Time:                                                           |                                |              |                 |             |  |
|-----------------------------------------------------------------------------|--------------------------------|--------------|-----------------|-------------|--|
| <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush  |                                |              |                 |             |  |
| Project Name: <b>Cross Gradient Wells</b>                                   |                                |              |                 |             |  |
| Date: <u>8-19-2016</u>                                                      |                                |              |                 |             |  |
| Project #: Annual                                                           |                                |              |                 |             |  |
| <b>PO#12615520</b>                                                          |                                |              |                 |             |  |
| Project Manager:                                                            |                                |              |                 |             |  |
| Sampler: <u>Michael A Wicker</u>                                            |                                |              |                 |             |  |
| On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                                |              |                 |             |  |
| Sample Temperature: <u>3.8</u>                                              |                                |              |                 |             |  |
| Container Type and #                                                        | Preservative Type              | HEAL No.     |                 |             |  |
| <u>6-VOA</u>                                                                | HCl                            | - <u>007</u> | <u>1608027</u>  |             |  |
| <u>1-500 ml Amber</u>                                                       | Cool                           | - <u>007</u> |                 |             |  |
| <u>1-500 ml</u>                                                             | HNO <sub>3</sub>               | - <u>007</u> |                 |             |  |
| <u>1-250 ml</u>                                                             | HNO <sub>3</sub>               | - <u>007</u> |                 |             |  |
| <u>1-500 ml</u>                                                             | /                              | - <u>007</u> |                 |             |  |
| <u>1-250 ml</u>                                                             | H <sub>2</sub> SO <sub>4</sub> | - <u>007</u> |                 |             |  |
|                                                                             |                                |              |                 |             |  |
|                                                                             |                                |              |                 |             |  |
|                                                                             |                                |              |                 |             |  |
|                                                                             |                                |              |                 |             |  |
|                                                                             |                                |              |                 |             |  |
|                                                                             |                                |              |                 |             |  |
|                                                                             |                                |              |                 |             |  |
| Received by: <u>Mt Weller</u>                                               |                                |              | Date            | Time        |  |
|                                                                             |                                |              | <u>8/19/16</u>  | <u>1545</u> |  |
| Received by: <u>[Signature]</u>                                             |                                |              | Date            | Time        |  |
|                                                                             |                                |              | <u>08/20/16</u> | <u>0915</u> |  |

| Chain-of-Custody Record                                                                         |       |                  |                    |        |  |
|-------------------------------------------------------------------------------------------------|-------|------------------|--------------------|--------|--|
| Client: Western Refining                                                                        |       |                  |                    |        |  |
| Mailing Address: 50 CR 4990                                                                     |       |                  |                    |        |  |
| Bloomfield, NM 87413                                                                            |       |                  |                    |        |  |
| Phone #: 505-632-4135                                                                           |       |                  |                    |        |  |
| email or Fax#:                                                                                  |       |                  |                    |        |  |
| QA/QC Package:                                                                                  |       |                  |                    |        |  |
| <input type="checkbox"/> Standard <input checked="" type="checkbox"/> Level 4 (Full Validation) |       |                  |                    |        |  |
| <input type="checkbox"/> Other _____                                                            |       |                  |                    |        |  |
| <input checked="" type="checkbox"/> EDD (Type) _____                                            |       |                  |                    |        |  |
| Date                                                                                            | Time  | Matrix           | Sample Request ID  |        |  |
| 8-19-16                                                                                         | 0820  | H <sub>2</sub> O | MW-33              |        |  |
|                                                                                                 |       |                  | MW-33              |        |  |
|                                                                                                 |       |                  | MW-33              |        |  |
|                                                                                                 |       |                  | MW-33              |        |  |
|                                                                                                 |       |                  | MW-33              |        |  |
| ↓                                                                                               | ↓     | ↓                | MW-33              | filter |  |
|                                                                                                 |       |                  | Trip Blank         |        |  |
|                                                                                                 |       |                  | OS 8122-16         |        |  |
|                                                                                                 |       |                  |                    |        |  |
|                                                                                                 |       |                  |                    |        |  |
|                                                                                                 |       |                  |                    |        |  |
|                                                                                                 |       |                  |                    |        |  |
| Date:                                                                                           | Time: |                  | Relinquished by:   |        |  |
| 8-19-16                                                                                         | 1545  |                  | [Signature]        |        |  |
| Date:                                                                                           | Time: |                  | Relinquished by:   |        |  |
| 8/19/16                                                                                         | 1740  |                  | [Signature] Walter |        |  |



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

[illegible]

Remarks: See full analyte list.

| Date:   | Time: | Relinquished by:                                                                      | Received by:                                                                          | Date:   | Time: |
|---------|-------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------|-------|
| 8-19-16 | 1545  |  | Walt                                                                                  | 8/19/16 | 1545  |
| 8/19/16 | 1740  | Walt                                                                                  |  | 8/20/16 | 0915  |

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



**Analytical Methods and Target Analytes**  
**Facility-Wide Groundwater Monitoring Plan - June 2012**  
**Western Refining - Bloomfield Refinery**

|                                                                      |
|----------------------------------------------------------------------|
| <b>VOCs (EPA Method 8260B) <sup>(1)</sup></b>                        |
| Target List                                                          |
| <i>Benzene</i>                                                       |
| <i>Toluene</i>                                                       |
| <i>Ethylbenzene</i>                                                  |
| <i>Xylenes</i>                                                       |
| <i>Methyl tert butyl ether (MTBE)</i>                                |
| <b>SVOCs - (EPA Method 8270)</b>                                     |
| Method List                                                          |
| <b>TPH-GRO (EPA Method 8015B)</b>                                    |
| Gasoline Range Organics                                              |
| <b>TPH-DRO (EPA Method 8015B)</b>                                    |
| Diesel Range Organics                                                |
| Motor Oil Range Organics                                             |
| <b>Total Carbon Dioxide (Laboratory Calculated)</b>                  |
| Dissolved CO <sub>2</sub>                                            |
| <b>Specific Conductivity (EPA Method 120.1 or Field Measurement)</b> |
| Specific Conductance                                                 |
| <b>TDS (EPA Method 160.1 or Field Measurement)</b>                   |
| Total Dissolved Solids                                               |
| <b>General Chemistry - Anions (EPA method 300.0)</b>                 |
| <i>Fluoride</i>                                                      |
| <i>Chloride</i>                                                      |
| <i>Bromide</i>                                                       |
| <i>Nitrogen, Nitrite (as N)</i>                                      |
| <i>Nitrogen, Nitrate (as N)</i>                                      |
| <i>Phosphorous, Orthophosphate (As P)</i>                            |
| <i>Sulfate</i>                                                       |
| <b>General Chemistry - Alkalinity (EPA Method 310.1)</b>             |
| <i>Alkalinity, Total</i>                                             |
| <i>Carbonate</i>                                                     |
| <i>Bicarbonate</i>                                                   |

|                                                         |
|---------------------------------------------------------|
| <b>Total Recoverable Metals (EPA Method 6010B/7470)</b> |
| Target List                                             |
| <i>Arsenic</i>                                          |
| <i>Barium</i>                                           |
| <i>Cadmium</i>                                          |
| <i>Chromium</i>                                         |
| <i>Lead</i>                                             |
| <i>Mercury</i>                                          |
| <i>Selenium</i>                                         |
| <i>Silver</i>                                           |
| Target List (for River Terrace Sampling Events Only)    |
| <i>Lead</i>                                             |
| <i>Mercury (DW-1 ONLY)</i>                              |
| <b>Dissolved Metals (EPA Method 6010B / 7470)</b>       |
| Target List (for Refinery Complex, Outfalls and River)  |
| <i>Arsenic</i>                                          |
| <i>Barium</i>                                           |
| <i>Cadmium</i>                                          |
| <i>Calcium</i>                                          |
| <i>Chromium</i>                                         |
| <i>Copper</i>                                           |
| <i>Iron</i>                                             |
| <i>Lead</i>                                             |
| <i>Magnesium</i>                                        |
| <i>Manganese</i>                                        |
| <i>Mercury</i>                                          |
| <i>Potassium</i>                                        |
| <i>Selenium</i>                                         |
| <i>Silver</i>                                           |
| <i>Sodium</i>                                           |
| <i>Uranium</i>                                          |
| <i>Zinc</i>                                             |

TPH = total petroleum hydrocarbons  
GRO = gasoline range organics  
VOCs = volatile organic compounds  
DRO = diesel range organics  
TDS = total dissolved solids

**Notes:**

- <sup>(1)</sup> VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009
- <sup>(2)</sup> Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



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

September 26, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: San Juan River 8-19-2016

OrderNo.: 1608C28

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/20/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-001A

**Client Sample ID:** Downstream  
**Collection Date:** 8/19/2016 3:30:00 PM  
**Matrix:** Aqueous

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:19:24 AM | B36669             |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:19:24 AM | B36669             |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:19:24 AM | B36669             |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:19:24 AM | B36669             |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 5:19:24 AM | B36669             |
| Surr: 1,2-Dichloroethane-d4                  | 98.3   | 70-130 |      | %Rec  | 1  | 8/23/2016 5:19:24 AM | B36669             |
| Surr: 4-Bromofluorobenzene                   | 103    | 70-130 |      | %Rec  | 1  | 8/23/2016 5:19:24 AM | B36669             |
| Surr: Dibromofluoromethane                   | 92.8   | 70-130 |      | %Rec  | 1  | 8/23/2016 5:19:24 AM | B36669             |
| Surr: Toluene-d8                             | 97.9   | 70-130 |      | %Rec  | 1  | 8/23/2016 5:19:24 AM | B36669             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 1 of 37                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-001B

**Client Sample ID:** Downstream  
**Collection Date:** 8/19/2016 3:30:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|-----------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                      | Analyst: <b>NSB</b> |
| Gasoline Range Organics (GRO)           | ND     | 0.050    |      | mg/L  | 1  | 8/26/2016 9:29:00 AM | R36808              |
| Surr: BFB                               | 78.7   | 66.4-120 |      | %Rec  | 1  | 8/26/2016 9:29:00 AM | R36808              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-001C

**Client Sample ID:** Downstream  
**Collection Date:** 8/19/2016 3:30:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID     |
|---------------------------------------|--------|----------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: TOM |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/23/2016 4:45:14 PM | 27114        |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 4:45:14 PM | 27114        |
| Surr: DNOP                            | 120    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 4:45:14 PM | 27114        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-001D

**Client Sample ID:** Downstream  
**Collection Date:** 8/19/2016 3:30:00 PM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed         | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|-----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 77     | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 5:24:04 PM  | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                       | Analyst: <b>MRA</b> |
| Fluoride                                        | 0.16   | 0.10  |      | mg/L                   | 1  | 8/26/2016 10:46:23 PM | R36827              |
| Chloride                                        | 2.7    | 0.50  |      | mg/L                   | 1  | 9/1/2016 8:49:12 PM   | A36952              |
| Bromide                                         | ND     | 0.10  |      | mg/L                   | 1  | 9/1/2016 8:49:12 PM   | A36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND     | 0.50  | H    | mg/L                   | 1  | 8/26/2016 10:46:23 PM | R36827              |
| Sulfate                                         | 49     | 10    |      | mg/L                   | 20 | 9/1/2016 9:01:37 PM   | A36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 1:23:15 PM  | R36847              |
| <b>SM2510B: SPECIFIC CONDUCTANCE</b>            |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Conductivity                                    | 290    | 1.0   |      | µmhos/cm               | 1  | 8/24/2016 5:24:04 PM  | R36738              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 86.16  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:24:04 PM  | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:24:04 PM  | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 86.16  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:24:04 PM  | R36738              |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>      |        |       |      |                        |    |                       | Analyst: <b>KS</b>  |
| Total Dissolved Solids                          | 184    | 40.0  | D    | mg/L                   | 1  | 8/26/2016 10:23:00 AM | 27145               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 4 of 37                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-001E

**Client Sample ID:** Downstream  
**Collection Date:** 8/19/2016 3:30:00 PM  
**Matrix:** Aqueous

| Analyses                                   | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID            |
|--------------------------------------------|--------|---------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |         |      |       |    |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:45:16 PM  | 27283               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |         |      |       |    |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND     | 0.020   |      | mg/L  | 1  | 8/25/2016 2:56:58 PM | 27124               |
| Barium                                     | 0.12   | 0.020   |      | mg/L  | 1  | 8/25/2016 2:56:58 PM | 27124               |
| Cadmium                                    | ND     | 0.0020  |      | mg/L  | 1  | 8/25/2016 2:56:58 PM | 27124               |
| Chromium                                   | ND     | 0.0060  |      | mg/L  | 1  | 8/25/2016 2:56:58 PM | 27124               |
| Lead                                       | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 2:56:58 PM | 27124               |
| Selenium                                   | ND     | 0.050   |      | mg/L  | 1  | 8/25/2016 2:56:58 PM | 27124               |
| Silver                                     | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 2:56:58 PM | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 5 of 37                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-001F

**Client Sample ID:** Downstream  
**Collection Date:** 8/19/2016 3:30:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                      | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:47:21 PM  | 27283        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                      | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Barium                                    | 0.085  | 0.020   |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Calcium                                   | 34     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Iron                                      | 0.31   | 0.020   |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Magnesium                                 | 5.5    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Manganese                                 | 0.032  | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Potassium                                 | 2.3    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Sodium                                    | 19     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 1:00:06 PM | B37126       |
| Zinc                                      | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:50:25 PM  | B37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 6 of 37                                    |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-002A

**Client Sample ID:** North of MW-45  
**Collection Date:** 8/19/2016 12:00:00 PM  
**Matrix:** Aqueous

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:48:10 AM | B36669             |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:48:10 AM | B36669             |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:48:10 AM | B36669             |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:48:10 AM | B36669             |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 5:48:10 AM | B36669             |
| Surr: 1,2-Dichloroethane-d4                  | 94.6   | 70-130 |      | %Rec  | 1  | 8/23/2016 5:48:10 AM | B36669             |
| Surr: 4-Bromofluorobenzene                   | 96.4   | 70-130 |      | %Rec  | 1  | 8/23/2016 5:48:10 AM | B36669             |
| Surr: Dibromofluoromethane                   | 93.4   | 70-130 |      | %Rec  | 1  | 8/23/2016 5:48:10 AM | B36669             |
| Surr: Toluene-d8                             | 100    | 70-130 |      | %Rec  | 1  | 8/23/2016 5:48:10 AM | B36669             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 7 of 37                                    |

**Analytical Report**Lab Order: **1608C28**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** North of MW-45**Project:** San Juan River 8-19-2016**Collection Date:** 8/19/2016 12:00:00 PM**Lab ID:** 1608C28-002B**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|-----------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                      | Analyst: <b>NSB</b> |
| Gasoline Range Organics (GRO)           | ND     | 0.050    |      | mg/L  | 1  | 8/26/2016 9:53:22 AM | R36808              |
| Surr: BFB                               | 88.6   | 66.4-120 |      | %Rec  | 1  | 8/26/2016 9:53:22 AM | R36808              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 8 of 37                                    |

**Analytical Report**Lab Order: **1608C28**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-002C

**Client Sample ID:** North of MW-45  
**Collection Date:** 8/19/2016 12:00:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/23/2016 5:06:59 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 5:06:59 PM | 27114               |
| Surr: DNOP                            | 111    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 5:06:59 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 9 of 37                                    |

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**Lab Order: **1608C28**Date Reported: **9/26/2016**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-002D

**Client Sample ID:** North of MW-45  
**Collection Date:** 8/19/2016 12:00:00 PM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed         | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|-----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 76     | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 5:32:15 PM  | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                       | Analyst: <b>MRA</b> |
| Fluoride                                        | 0.15   | 0.10  |      | mg/L                   | 1  | 8/26/2016 11:11:12 PM | R36827              |
| Chloride                                        | 2.7    | 0.50  |      | mg/L                   | 1  | 9/1/2016 9:14:02 PM   | A36952              |
| Bromide                                         | ND     | 0.10  |      | mg/L                   | 1  | 9/1/2016 9:14:02 PM   | A36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND     | 0.50  | H    | mg/L                   | 1  | 8/26/2016 11:11:12 PM | R36827              |
| Sulfate                                         | 48     | 10    |      | mg/L                   | 20 | 9/1/2016 9:26:26 PM   | A36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 1:35:39 PM  | R36847              |
| <b>SM2510B: SPECIFIC CONDUCTANCE</b>            |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Conductivity                                    | 280    | 1.0   |      | µmhos/cm               | 1  | 8/24/2016 5:32:15 PM  | R36738              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 84.80  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:32:15 PM  | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:32:15 PM  | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 84.80  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:32:15 PM  | R36738              |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>      |        |       |      |                        |    |                       | Analyst: <b>KS</b>  |
| Total Dissolved Solids                          | 180    | 40.0  | D    | mg/L                   | 1  | 8/26/2016 10:23:00 AM | 27145               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-002E

**Client Sample ID:** North of MW-45  
**Collection Date:** 8/19/2016 12:00:00 PM  
**Matrix:** Aqueous

| Analyses                                   | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID            |
|--------------------------------------------|--------|---------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |         |      |       |    |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:49:26 PM  | 27283               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |         |      |       |    |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND     | 0.020   |      | mg/L  | 1  | 8/25/2016 3:00:59 PM | 27124               |
| Barium                                     | 0.14   | 0.020   |      | mg/L  | 1  | 8/25/2016 3:00:59 PM | 27124               |
| Cadmium                                    | ND     | 0.0020  |      | mg/L  | 1  | 8/25/2016 3:00:59 PM | 27124               |
| Chromium                                   | ND     | 0.0060  |      | mg/L  | 1  | 8/25/2016 3:00:59 PM | 27124               |
| Lead                                       | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 3:00:59 PM | 27124               |
| Selenium                                   | ND     | 0.050   |      | mg/L  | 1  | 8/25/2016 3:00:59 PM | 27124               |
| Silver                                     | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 3:00:59 PM | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-002F

**Client Sample ID:** North of MW-45  
**Collection Date:** 8/19/2016 12:00:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                      | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:51:33 PM  | 27283        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                      | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Barium                                    | 0.082  | 0.020   |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Calcium                                   | 34     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Iron                                      | 0.32   | 0.020   |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Magnesium                                 | 5.6    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Manganese                                 | 0.033  | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Potassium                                 | 2.3    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Sodium                                    | 20     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 1:01:47 PM | B37126       |
| Zinc                                      | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:54:27 PM  | B37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C28

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-003A

**Client Sample ID:** North of MW-46  
**Collection Date:** 8/19/2016 12:30:00 PM  
**Matrix:** Aqueous

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:17:06 AM | B36669             |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:17:06 AM | B36669             |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:17:06 AM | B36669             |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:17:06 AM | B36669             |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 6:17:06 AM | B36669             |
| Surr: 1,2-Dichloroethane-d4                  | 98.6   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:17:06 AM | B36669             |
| Surr: 4-Bromofluorobenzene                   | 101    | 70-130 |      | %Rec  | 1  | 8/23/2016 6:17:06 AM | B36669             |
| Surr: Dibromofluoromethane                   | 94.0   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:17:06 AM | B36669             |
| Surr: Toluene-d8                             | 97.7   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:17:06 AM | B36669             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C28**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-003B

**Client Sample ID:** North of MW-46  
**Collection Date:** 8/19/2016 12:30:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed         | Batch ID            |
|-----------------------------------------|--------|----------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                       | Analyst: <b>NSB</b> |
| Gasoline Range Organics (GRO)           | ND     | 0.050    |      | mg/L  | 1  | 8/26/2016 10:17:46 AM | R36808              |
| Surr: BFB                               | 86.5   | 66.4-120 |      | %Rec  | 1  | 8/26/2016 10:17:46 AM | R36808              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



**Analytical Report**Lab Order: **1608C28**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-003C

**Client Sample ID:** North of MW-46  
**Collection Date:** 8/19/2016 12:30:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/23/2016 5:28:37 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 5:28:37 PM | 27114               |
| Surr: DNOP                            | 115    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 5:28:37 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-003D

**Client Sample ID:** North of MW-46  
**Collection Date:** 8/19/2016 12:30:00 PM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed         | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|-----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 77     | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 5:40:10 PM  | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                       | Analyst: <b>MRA</b> |
| Fluoride                                        | 0.15   | 0.10  |      | mg/L                   | 1  | 8/26/2016 11:36:01 PM | R36827              |
| Chloride                                        | 2.7    | 0.50  |      | mg/L                   | 1  | 9/1/2016 10:03:39 PM  | A36952              |
| Bromide                                         | ND     | 0.10  |      | mg/L                   | 1  | 9/1/2016 10:03:39 PM  | A36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND     | 0.50  | H    | mg/L                   | 1  | 8/26/2016 11:36:01 PM | R36827              |
| Sulfate                                         | 49     | 10    |      | mg/L                   | 20 | 9/1/2016 10:16:04 PM  | A36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 1:48:04 PM  | R36847              |
| <b>SM2510B: SPECIFIC CONDUCTANCE</b>            |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Conductivity                                    | 280    | 1.0   |      | µmhos/cm               | 1  | 8/24/2016 5:40:10 PM  | R36738              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 85.04  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:40:10 PM  | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:40:10 PM  | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 85.04  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 5:40:10 PM  | R36738              |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>      |        |       |      |                        |    |                       | Analyst: <b>KS</b>  |
| Total Dissolved Solids                          | 170    | 40.0  | D    | mg/L                   | 1  | 8/26/2016 10:23:00 AM | 27145               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-003E

**Client Sample ID:** North of MW-46  
**Collection Date:** 8/19/2016 12:30:00 PM  
**Matrix:** Aqueous

| Analyses                                   | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID            |
|--------------------------------------------|--------|---------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |         |      |       |    |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:57:54 PM  | 27283               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |         |      |       |    |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND     | 0.020   |      | mg/L  | 1  | 8/25/2016 3:04:56 PM | 27124               |
| Barium                                     | 0.11   | 0.020   |      | mg/L  | 1  | 8/25/2016 3:04:56 PM | 27124               |
| Cadmium                                    | ND     | 0.0020  |      | mg/L  | 1  | 8/25/2016 3:04:56 PM | 27124               |
| Chromium                                   | ND     | 0.0060  |      | mg/L  | 1  | 8/25/2016 3:04:56 PM | 27124               |
| Lead                                       | 0.0058 | 0.0050  |      | mg/L  | 1  | 8/25/2016 3:04:56 PM | 27124               |
| Selenium                                   | ND     | 0.050   |      | mg/L  | 1  | 8/25/2016 3:04:56 PM | 27124               |
| Silver                                     | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 3:04:56 PM | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-003F

**Client Sample ID:** North of MW-46  
**Collection Date:** 8/19/2016 12:30:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                      | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 1:59:53 PM  | 27283        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                      | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Barium                                    | 0.086  | 0.020   |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Calcium                                   | 34     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Iron                                      | 0.36   | 0.020   |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Magnesium                                 | 5.5    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Manganese                                 | 0.032  | 0.0020  |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Potassium                                 | 2.2    | 1.0     |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Sodium                                    | 19     | 1.0     |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 1:03:27 PM | B37126       |
| Zinc                                      | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 6:58:29 PM  | B37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C28

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-004A

**Client Sample ID:** Upstream  
**Collection Date:** 8/19/2016 1:30:00 PM  
**Matrix:** Aqueous

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:45:50 AM | B36669             |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:45:50 AM | B36669             |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:45:50 AM | B36669             |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:45:50 AM | B36669             |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 6:45:50 AM | B36669             |
| Surr: 1,2-Dichloroethane-d4                  | 99.2   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:45:50 AM | B36669             |
| Surr: 4-Bromofluorobenzene                   | 101    | 70-130 |      | %Rec  | 1  | 8/23/2016 6:45:50 AM | B36669             |
| Surr: Dibromofluoromethane                   | 99.0   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:45:50 AM | B36669             |
| Surr: Toluene-d8                             | 97.4   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:45:50 AM | B36669             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 19 of 37                                   |

**Analytical Report**Lab Order: **1608C28**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-004B

**Client Sample ID:** Upstream  
**Collection Date:** 8/19/2016 1:30:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed         | Batch ID            |
|-----------------------------------------|--------|----------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |          |      |       |    |                       | Analyst: <b>NSB</b> |
| Gasoline Range Organics (GRO)           | ND     | 0.050    |      | mg/L  | 1  | 8/26/2016 10:42:10 AM | R36808              |
| Surr: BFB                               | 85.1   | 66.4-120 |      | %Rec  | 1  | 8/26/2016 10:42:10 AM | R36808              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C28**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-004C

**Client Sample ID:** Upstream  
**Collection Date:** 8/19/2016 1:30:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/23/2016 5:50:18 PM | 27114               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/23/2016 5:50:18 PM | 27114               |
| Surr: DNOP                            | 117    | 67.9-149 |      | %Rec  | 1  | 8/23/2016 5:50:18 PM | 27114               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-004D

**Client Sample ID:** Upstream  
**Collection Date:** 8/19/2016 1:30:00 PM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed         | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|-----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 77     | 1.0   | H    | mg CO2/L               | 1  | 8/25/2016 1:17:11 AM  | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                       | Analyst: <b>MRA</b> |
| Fluoride                                        | 0.16   | 0.10  |      | mg/L                   | 1  | 8/27/2016 12:00:50 AM | R36827              |
| Chloride                                        | 2.7    | 0.50  |      | mg/L                   | 1  | 9/1/2016 10:28:28 PM  | A36952              |
| Bromide                                         | ND     | 0.10  |      | mg/L                   | 1  | 9/1/2016 10:28:28 PM  | A36952              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND     | 0.50  | H    | mg/L                   | 1  | 8/27/2016 12:00:50 AM | R36827              |
| Sulfate                                         | 49     | 10    |      | mg/L                   | 20 | 9/1/2016 10:40:52 PM  | A36952              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/29/2016 4:04:35 PM  | R36847              |
| <b>SM2510B: SPECIFIC CONDUCTANCE</b>            |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Conductivity                                    | 290    | 1.0   |      | µmhos/cm               | 1  | 8/25/2016 1:17:11 AM  | R36738              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                       | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 86.28  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/25/2016 1:17:11 AM  | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/25/2016 1:17:11 AM  | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 86.28  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/25/2016 1:17:11 AM  | R36738              |
| <b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>      |        |       |      |                        |    |                       | Analyst: <b>KS</b>  |
| Total Dissolved Solids                          | 178    | 40.0  | D    | mg/L                   | 1  | 8/26/2016 10:23:00 AM | 27145               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-004E

**Client Sample ID:** Upstream  
**Collection Date:** 8/19/2016 1:30:00 PM  
**Matrix:** Aqueous

| Analyses                                   | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID     |
|--------------------------------------------|--------|---------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |         |      |       |    |                      | Analyst: pmf |
| Mercury                                    | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 2:01:55 PM  | 27283        |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |         |      |       |    |                      | Analyst: MED |
| Arsenic                                    | ND     | 0.020   |      | mg/L  | 1  | 8/25/2016 3:08:51 PM | 27124        |
| Barium                                     | 0.11   | 0.020   |      | mg/L  | 1  | 8/25/2016 3:08:51 PM | 27124        |
| Cadmium                                    | ND     | 0.0020  |      | mg/L  | 1  | 8/25/2016 3:08:51 PM | 27124        |
| Chromium                                   | ND     | 0.0060  |      | mg/L  | 1  | 8/25/2016 3:08:51 PM | 27124        |
| Lead                                       | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 3:08:51 PM | 27124        |
| Selenium                                   | ND     | 0.050   |      | mg/L  | 1  | 8/25/2016 3:08:51 PM | 27124        |
| Silver                                     | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 3:08:51 PM | 27124        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-004F

**Client Sample ID:** Upstream  
**Collection Date:** 8/19/2016 1:30:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                      | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/1/2016 2:03:56 PM  | 27283        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                      | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Barium                                    | 0.084  | 0.020   |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Calcium                                   | 34     | 1.0     |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Iron                                      | 0.29   | 0.020   |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Magnesium                                 | 5.5    | 1.0     |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Manganese                                 | 0.030  | 0.0020  |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Potassium                                 | 2.1    | 1.0     |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Sodium                                    | 19     | 1.0     |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 1:05:09 PM | B37126       |
| Zinc                                      | 0.024  | 0.020   |      | mg/L  | 1  | 9/7/2016 7:02:31 PM  | B37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C28

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River 8-19-2016  
**Lab ID:** 1608C28-005A

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Matrix:** Trip Blank

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:14:40 AM | B36669             |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:14:40 AM | B36669             |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:14:40 AM | B36669             |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 7:14:40 AM | B36669             |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 7:14:40 AM | B36669             |
| Surr: 1,2-Dichloroethane-d4                  | 103    | 70-130 |      | %Rec  | 1  | 8/23/2016 7:14:40 AM | B36669             |
| Surr: 4-Bromofluorobenzene                   | 97.7   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:14:40 AM | B36669             |
| Surr: Dibromofluoromethane                   | 98.3   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:14:40 AM | B36669             |
| Surr: Toluene-d8                             | 99.2   | 70-130 |      | %Rec  | 1  | 8/23/2016 7:14:40 AM | B36669             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C28

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-19-2016

|                                  |            |                |                  |             |                                 |          |             |      |          |      |
|----------------------------------|------------|----------------|------------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID                        | <b>MB</b>  | SampType:      | <b>mblk</b>      | TestCode:   | <b>EPA Method 300.0: Anions</b> |          |             |      |          |      |
| Client ID:                       | <b>PBW</b> | Batch ID:      | <b>R36827</b>    | RunNo:      | <b>36827</b>                    |          |             |      |          |      |
| Prep Date:                       |            | Analysis Date: | <b>8/26/2016</b> | SeqNo:      | <b>1141638</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                          | Result     | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Fluoride                         | ND         | 0.10           |                  |             |                                 |          |             |      |          |      |
| Phosphorus, Orthophosphate (As P | ND         | 0.50           |                  |             |                                 |          |             |      |          |      |

|                                  |             |                |                  |             |                                 |          |             |      |          |      |
|----------------------------------|-------------|----------------|------------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID                        | <b>LCS</b>  | SampType:      | <b>lcs</b>       | TestCode:   | <b>EPA Method 300.0: Anions</b> |          |             |      |          |      |
| Client ID:                       | <b>LCSW</b> | Batch ID:      | <b>R36827</b>    | RunNo:      | <b>36827</b>                    |          |             |      |          |      |
| Prep Date:                       |             | Analysis Date: | <b>8/26/2016</b> | SeqNo:      | <b>1141639</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                          | Result      | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Fluoride                         | 0.46        | 0.10           | 0.5000           | 0           | 92.8                            | 90       | 110         |      |          |      |
| Phosphorus, Orthophosphate (As P | 4.6         | 0.50           | 5.000            | 0           | 92.6                            | 90       | 110         |      |          |      |

|                      |            |                |                  |             |                                 |          |             |      |          |      |
|----------------------|------------|----------------|------------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID            | <b>MB</b>  | SampType:      | <b>MBLK</b>      | TestCode:   | <b>EPA Method 300.0: Anions</b> |          |             |      |          |      |
| Client ID:           | <b>PBW</b> | Batch ID:      | <b>R36847</b>    | RunNo:      | <b>36847</b>                    |          |             |      |          |      |
| Prep Date:           |            | Analysis Date: | <b>8/29/2016</b> | SeqNo:      | <b>1142224</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte              | Result     | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Nitrate+Nitrite as N | ND         | 0.20           |                  |             |                                 |          |             |      |          |      |

|                      |             |                |                  |             |                                 |          |             |      |          |      |
|----------------------|-------------|----------------|------------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID            | <b>LCS</b>  | SampType:      | <b>LCS</b>       | TestCode:   | <b>EPA Method 300.0: Anions</b> |          |             |      |          |      |
| Client ID:           | <b>LCSW</b> | Batch ID:      | <b>R36847</b>    | RunNo:      | <b>36847</b>                    |          |             |      |          |      |
| Prep Date:           |             | Analysis Date: | <b>8/29/2016</b> | SeqNo:      | <b>1142225</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte              | Result      | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Nitrate+Nitrite as N | 3.5         | 0.20           | 3.500            | 0           | 101                             | 90       | 110         |      |          |      |

|            |            |                |                 |             |                                 |          |             |      |          |      |
|------------|------------|----------------|-----------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID  | <b>MB</b>  | SampType:      | <b>MBLK</b>     | TestCode:   | <b>EPA Method 300.0: Anions</b> |          |             |      |          |      |
| Client ID: | <b>PBW</b> | Batch ID:      | <b>A36952</b>   | RunNo:      | <b>36952</b>                    |          |             |      |          |      |
| Prep Date: |            | Analysis Date: | <b>9/1/2016</b> | SeqNo:      | <b>1145113</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte    | Result     | PQL            | SPK value       | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Chloride   | ND         | 0.50           |                 |             |                                 |          |             |      |          |      |
| Bromide    | ND         | 0.10           |                 |             |                                 |          |             |      |          |      |
| Sulfate    | ND         | 0.50           |                 |             |                                 |          |             |      |          |      |

|            |             |                |                 |             |                                 |          |             |      |          |      |
|------------|-------------|----------------|-----------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID  | <b>LCS</b>  | SampType:      | <b>LCS</b>      | TestCode:   | <b>EPA Method 300.0: Anions</b> |          |             |      |          |      |
| Client ID: | <b>LCSW</b> | Batch ID:      | <b>A36952</b>   | RunNo:      | <b>36952</b>                    |          |             |      |          |      |
| Prep Date: |             | Analysis Date: | <b>9/1/2016</b> | SeqNo:      | <b>1145114</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte    | Result      | PQL            | SPK value       | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Chloride   | 4.8         | 0.50           | 5.000           | 0           | 96.7                            | 90       | 110         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C28

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-19-2016

|            |        |      |                         |             |                                    |          |             |      |          |      |
|------------|--------|------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS    |      | SampType: LCS           |             | TestCode: EPA Method 300.0: Anions |          |             |      |          |      |
| Client ID: | LCSW   |      | Batch ID: A36952        |             | RunNo: 36952                       |          |             |      |          |      |
| Prep Date: |        |      | Analysis Date: 9/1/2016 |             | SeqNo: 1145114                     |          | Units: mg/L |      |          |      |
| Analyte    | Result | PQL  | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Bromide    | 2.5    | 0.10 | 2.500                   | 0           | 98.4                               | 90       | 110         |      |          |      |
| Sulfate    | 10     | 0.50 | 10.00                   | 0           | 99.8                               | 90       | 110         |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

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WO#: 1608C28

26-Sep-16

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|                             |           |      |                          |             |                                          |          |             |      |          |      |
|-----------------------------|-----------|------|--------------------------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-27114 |      | SampType: LCS            |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |      | Batch ID: 27114          |             | RunNo: 36683                             |          |             |      |          |      |
| Prep Date:                  | 8/23/2016 |      | Analysis Date: 8/23/2016 |             | SeqNo: 1136777                           |          | Units: mg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value                | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 2.8       | 0.20 | 2.500                    | 0           | 112                                      | 65.4     | 162         |      |          |      |
| Surr: DNOP                  | 0.26      |      | 0.2500                   |             | 102                                      | 67.9     | 149         |      |          |      |

|                                |           |                          |           |             |                                          |          |             |      |          |      |
|--------------------------------|-----------|--------------------------|-----------|-------------|------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-27114  | SampType: MBLK           |           |             | TestCode: EPA Method 8015D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       | Batch ID: 27114          |           |             | RunNo: 36683                             |          |             |      |          |      |
| Prep Date:                     | 8/23/2016 | Analysis Date: 8/23/2016 |           |             | SeqNo: 1136780                           |          | Units: mg/L |      |          |      |
| Analyte                        | Result    | PQL                      | SPK value | SPK Ref Val | %REC                                     | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO)    | ND        | 0.20                     |           |             |                                          |          |             |      |          |      |
| Motor Oil Range Organics (MRO) | ND        | 2.5                      |           |             |                                          |          |             |      |          |      |
| Surr: DNOP                     | 0.49      |                          | 0.5000    |             | 97.5                                     | 67.9     | 149         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
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ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C28

26-Sep-16

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|                               |        |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 5ML RB | SampType:      | MBLK      | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | PBW    | Batch ID:      | R36808    | RunNo:      | 36808                            |          |           |      |          |      |
| Prep Date:                    |        | Analysis Date: | 8/26/2016 | SeqNo:      | 1140791                          | 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                     | 16     |                | 20.00     |             | 82.4                             | 66.4     | 120       |      |          |      |

|                               |               |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 2.5UG GRO LCS | SampType:      | LCS       | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | LCSW          | Batch ID:      | R36808    | RunNo:      | 36808                            |          |           |      |          |      |
| Prep Date:                    |               | Analysis Date: | 8/26/2016 | SeqNo:      | 1140792                          | Units:   | mg/L      |      |          |      |
| Analyte                       | Result        | PQL            | SPK value | SPK Ref Val | %REC                             | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.51          | 0.050          | 0.5000    | 0           | 102                              | 80       | 120       |      |          |      |
| Surr: BFB                     | 19            |                | 20.00     |             | 94.6                             | 66.4     | 120       |      |          |      |

### Qualifiers:

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R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

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E Value above quantitation range  
J Analyte detected below quantitation limits  
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RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

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26-Sep-16

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|                             |            |     |                          |             |                                                 |          |             |      |          |      |
|-----------------------------|------------|-----|--------------------------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs3 |     | SampType: LCS            |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                  | LCSW       |     | Batch ID: B36669         |             | RunNo: 36669                                    |          |             |      |          |      |
| Prep Date:                  |            |     | Analysis Date: 8/22/2016 |             | SeqNo: 1136510                                  |          | Units: µg/L |      |          |      |
| Analyte                     | Result     | PQL | SPK value                | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 20         | 1.0 | 20.00                    | 0           | 98.6                                            | 70       | 130         |      |          |      |
| Toluene                     | 19         | 1.0 | 20.00                    | 0           | 95.2                                            | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.8        |     | 10.00                    |             | 98.2                                            | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.5        |     | 10.00                    |             | 94.7                                            | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.7        |     | 10.00                    |             | 96.9                                            | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.7        |     | 10.00                    |             | 97.5                                            | 70       | 130         |      |          |      |

|                                |        |                          |           |             |                                                 |          |             |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|-------------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | rb3    | SampType: MBLK           |           |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: B36669         |           |             | RunNo: 36669                                    |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 8/23/2016 |           |             | SeqNo: 1136511                                  |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                                 |          |             |      |          |      |
| Xylenes, Total                 | ND     | 1.5                      |           |             |                                                 |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 9.5    |                          | 10.00     |             | 95.1                                            | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene     | 9.8    |                          | 10.00     |             | 98.0                                            | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane     | 9.4    |                          | 10.00     |             | 94.0                                            | 70       | 130         |      |          |      |
| Surr: Toluene-d8               | 9.7    |                          | 10.00     |             | 96.7                                            | 70       | 130         |      |          |      |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C28

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-19-2016

|              |                  |                |           |             |                               |          |           |       |          |      |
|--------------|------------------|----------------|-----------|-------------|-------------------------------|----------|-----------|-------|----------|------|
| Sample ID    | 1608c28-003d dup | SampType:      | dup       | TestCode:   | SM2510B: Specific Conductance |          |           |       |          |      |
| Client ID:   | North of MW-46   | Batch ID:      | R36738    | RunNo:      | 36738                         |          |           |       |          |      |
| Prep Date:   |                  | Analysis Date: | 8/24/2016 | SeqNo:      | 1138511                       | Units:   | µmhos/cm  |       |          |      |
| Analyte      | Result           | PQL            | SPK value | SPK Ref Val | %REC                          | LowLimit | HighLimit | %RPD  | RPDLimit | Qual |
| Conductivity | 280              | 1.0            |           |             |                               |          |           | 0.141 | 20       |      |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C28

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-19-2016

|            |           |         |                |             |      |           |                          |      |             |      |  |
|------------|-----------|---------|----------------|-------------|------|-----------|--------------------------|------|-------------|------|--|
| Sample ID  | MB-27283  |         | SampType:      | MBLK        |      | TestCode: | EPA Method 7470: Mercury |      |             |      |  |
| Client ID: | PBW       |         | Batch ID:      | 27283       |      | RunNo:    | 36941                    |      |             |      |  |
| Prep Date: | 8/31/2016 |         | Analysis Date: | 9/1/2016    |      | SeqNo:    | 1144815                  |      | Units: mg/L |      |  |
| Analyte    | Result    | PQL     | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                | %RPD | RPDLimit    | Qual |  |
| Mercury    | ND        | 0.00020 |                |             |      |           |                          |      |             |      |  |

|            |           |         |                         |             |                                    |          |             |      |          |      |
|------------|-----------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-27283 |         | SampType: LCS           |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | LCSW      |         | Batch ID: 27283         |             | RunNo: 36941                       |          |             |      |          |      |
| Prep Date: | 8/31/2016 |         | Analysis Date: 9/1/2016 |             | SeqNo: 1144816                     |          | Units: mg/L |      |          |      |
| Analyte    | Result    | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0049    | 0.00020 | 0.005000                | 0           | 98.4                               | 80       | 120         |      |          |      |

### Qualifiers:

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R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

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WO#: 1608C28

26-Sep-16

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Project: San Juan River 8-19-2016

|            |             |                |                 |           |                                           |        |             |  |  |  |
|------------|-------------|----------------|-----------------|-----------|-------------------------------------------|--------|-------------|--|--|--|
| Sample ID  | <b>MB-B</b> | SampType:      | <b>MBLK</b>     | TestCode: | <b>EPA Method 6010B: Dissolved Metals</b> |        |             |  |  |  |
| Client ID: | <b>PBW</b>  | Batch ID:      | <b>B37036</b>   | RunNo:    | <b>37036</b>                              |        |             |  |  |  |
| Prep Date: |             | Analysis Date: | <b>9/7/2016</b> | SeqNo:    | <b>1147839</b>                            | Units: | <b>mg/L</b> |  |  |  |

| Analyte   | Result | PQL    | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|-----------|--------|--------|-----------|-------------|------|----------|-----------|------|----------|------|
| Arsenic   | ND     | 0.020  |           |             |      |          |           |      |          |      |
| Barium    | ND     | 0.020  |           |             |      |          |           |      |          |      |
| Cadmium   | ND     | 0.0020 |           |             |      |          |           |      |          |      |
| Calcium   | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Chromium  | ND     | 0.0060 |           |             |      |          |           |      |          |      |
| Copper    | ND     | 0.0060 |           |             |      |          |           |      |          |      |
| Iron      | ND     | 0.020  |           |             |      |          |           |      |          |      |
| Lead      | ND     | 0.0050 |           |             |      |          |           |      |          |      |
| Magnesium | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Manganese | ND     | 0.0020 |           |             |      |          |           |      |          |      |
| Potassium | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Selenium  | ND     | 0.050  |           |             |      |          |           |      |          |      |
| Silver    | ND     | 0.0050 |           |             |      |          |           |      |          |      |
| Sodium    | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Zinc      | ND     | 0.020  |           |             |      |          |           |      |          |      |

|            |              |                |                 |           |                                           |        |             |  |  |  |
|------------|--------------|----------------|-----------------|-----------|-------------------------------------------|--------|-------------|--|--|--|
| Sample ID  | <b>LCS-B</b> | SampType:      | <b>LCS</b>      | TestCode: | <b>EPA Method 6010B: Dissolved Metals</b> |        |             |  |  |  |
| Client ID: | <b>LCSW</b>  | Batch ID:      | <b>B37036</b>   | RunNo:    | <b>37036</b>                              |        |             |  |  |  |
| Prep Date: |              | Analysis Date: | <b>9/7/2016</b> | SeqNo:    | <b>1147840</b>                            | Units: | <b>mg/L</b> |  |  |  |

| Analyte   | Result | PQL    | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|-----------|--------|--------|-----------|-------------|------|----------|-----------|------|----------|------|
| Arsenic   | 0.47   | 0.020  | 0.5000    | 0           | 94.4 | 80       | 120       |      |          |      |
| Barium    | 0.46   | 0.020  | 0.5000    | 0           | 92.1 | 80       | 120       |      |          |      |
| Cadmium   | 0.47   | 0.0020 | 0.5000    | 0           | 93.7 | 80       | 120       |      |          |      |
| Calcium   | 57     | 1.0    | 50.00     | 0           | 114  | 80       | 120       |      |          |      |
| Chromium  | 0.46   | 0.0060 | 0.5000    | 0           | 92.1 | 80       | 120       |      |          |      |
| Copper    | 0.45   | 0.0060 | 0.5000    | 0           | 90.9 | 80       | 120       |      |          |      |
| Iron      | 0.47   | 0.020  | 0.5000    | 0           | 93.2 | 80       | 120       |      |          |      |
| Lead      | 0.46   | 0.0050 | 0.5000    | 0           | 91.2 | 80       | 120       |      |          |      |
| Magnesium | 58     | 1.0    | 50.00     | 0           | 116  | 80       | 120       |      |          |      |
| Manganese | 0.45   | 0.0020 | 0.5000    | 0           | 90.2 | 80       | 120       |      |          |      |
| Potassium | 56     | 1.0    | 50.00     | 0           | 112  | 80       | 120       |      |          |      |
| Selenium  | 0.46   | 0.050  | 0.5000    | 0           | 93.0 | 80       | 120       |      |          |      |
| Silver    | 0.095  | 0.0050 | 0.1000    | 0           | 95.0 | 80       | 120       |      |          |      |
| Sodium    | 57     | 1.0    | 50.00     | 0           | 114  | 80       | 120       |      |          |      |
| Zinc      | 0.46   | 0.020  | 0.5000    | 0           | 91.7 | 80       | 120       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C28

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-19-2016

|            |        |      |                |             |      |           |                                    |      |          |      |  |
|------------|--------|------|----------------|-------------|------|-----------|------------------------------------|------|----------|------|--|
| Sample ID  | MB-B   |      | SampType:      | MBLK        |      | TestCode: | EPA Method 6010B: Dissolved Metals |      |          |      |  |
| Client ID: | PBW    |      | Batch ID:      | B37126      |      | RunNo:    | 37126                              |      |          |      |  |
| Prep Date: |        |      | Analysis Date: | 9/12/2016   |      | SeqNo:    | 1151181                            |      | Units:   | mg/L |  |
| Analyte    | Result | PQL  | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                          | %RPD | RPDLimit | Qual |  |
| Uranium    | ND     | 0.10 |                |             |      |           |                                    |      |          |      |  |

|            |        |      |                          |             |                                              |          |             |      |          |      |
|------------|--------|------|--------------------------|-------------|----------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-B  |      | SampType: LCS            |             | TestCode: EPA Method 6010B: Dissolved Metals |          |             |      |          |      |
| Client ID: | LCSW   |      | Batch ID: B37126         |             | RunNo: 37126                                 |          |             |      |          |      |
| Prep Date: |        |      | Analysis Date: 9/12/2016 |             | SeqNo: 1151182                               |          | Units: mg/L |      |          |      |
| Analyte    | Result | PQL  | SPK value                | SPK Ref Val | %REC                                         | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Uranium    | 0.51   | 0.10 | 0.5000                   | 0           | 101                                          | 80       | 120         |      |          |      |

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D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C28

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-19-2016

|            |                  |        |                |                  |      |           |                                            |        |             |      |
|------------|------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>MB-27124</b>  |        | SampType:      | <b>MBLK</b>      |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>PBW</b>       |        | Batch ID:      | <b>27124</b>     |      | RunNo:    | <b>36757</b>                               |        |             |      |
| Prep Date: | <b>8/23/2016</b> |        | Analysis Date: | <b>8/25/2016</b> |      | SeqNo:    | <b>1139271</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | ND               | 0.020  |                |                  |      |           |                                            |        |             |      |
| Barium     | ND               | 0.020  |                |                  |      |           |                                            |        |             |      |
| Cadmium    | ND               | 0.0020 |                |                  |      |           |                                            |        |             |      |
| Chromium   | ND               | 0.0060 |                |                  |      |           |                                            |        |             |      |
| Lead       | ND               | 0.0050 |                |                  |      |           |                                            |        |             |      |
| Selenium   | ND               | 0.050  |                |                  |      |           |                                            |        |             |      |
| Silver     | ND               | 0.0050 |                |                  |      |           |                                            |        |             |      |

|            |                  |        |                |                  |      |           |                                            |        |             |      |
|------------|------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>LCS-27124</b> |        | SampType:      | <b>LCS</b>       |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>LCSW</b>      |        | Batch ID:      | <b>27124</b>     |      | RunNo:    | <b>36757</b>                               |        |             |      |
| Prep Date: | <b>8/23/2016</b> |        | Analysis Date: | <b>8/25/2016</b> |      | SeqNo:    | <b>1139272</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | 0.50             | 0.020  | 0.5000         | 0                | 100  | 80        | 120                                        |        |             |      |
| Barium     | 0.48             | 0.020  | 0.5000         | 0                | 96.6 | 80        | 120                                        |        |             |      |
| Cadmium    | 0.49             | 0.0020 | 0.5000         | 0                | 97.7 | 80        | 120                                        |        |             |      |
| Chromium   | 0.48             | 0.0060 | 0.5000         | 0                | 96.6 | 80        | 120                                        |        |             |      |
| Lead       | 0.47             | 0.0050 | 0.5000         | 0                | 94.2 | 80        | 120                                        |        |             |      |
| Selenium   | 0.48             | 0.050  | 0.5000         | 0                | 95.2 | 80        | 120                                        |        |             |      |
| Silver     | 0.10             | 0.0050 | 0.1000         | 0                | 100  | 80        | 120                                        |        |             |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C28

26-Sep-16

**Client:** Western Refining Southwest, Inc.

**Project:** San Juan River 8-19-2016

| Sample ID <b>mb-1</b>       | SampType: <b>mblk</b>           |       |           | TestCode: <b>SM2320B: Alkalinity</b> |      |          |                          |      |          |      |
|-----------------------------|---------------------------------|-------|-----------|--------------------------------------|------|----------|--------------------------|------|----------|------|
| Client ID: <b>PBW</b>       | Batch ID: <b>R36738</b>         |       |           | RunNo: <b>36738</b>                  |      |          |                          |      |          |      |
| Prep Date:                  | Analysis Date: <b>8/24/2016</b> |       |           | SeqNo: <b>1138449</b>                |      |          | Units: <b>mg/L CaCO3</b> |      |          |      |
| Analyte                     | Result                          | PQL   | SPK value | SPK Ref Val                          | %REC | LowLimit | HighLimit                | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | ND                              | 20.00 |           |                                      |      |          |                          |      |          |      |

| Sample ID <b>ics-1</b>      | SampType: <b>ics</b>            |       |           | TestCode: <b>SM2320B: Alkalinity</b> |      |          |                          |      |          |      |
|-----------------------------|---------------------------------|-------|-----------|--------------------------------------|------|----------|--------------------------|------|----------|------|
| Client ID: <b>LCSW</b>      | Batch ID: <b>R36738</b>         |       |           | RunNo: <b>36738</b>                  |      |          |                          |      |          |      |
| Prep Date:                  | Analysis Date: <b>8/24/2016</b> |       |           | SeqNo: <b>1138450</b>                |      |          | Units: <b>mg/L CaCO3</b> |      |          |      |
| Analyte                     | Result                          | PQL   | SPK value | SPK Ref Val                          | %REC | LowLimit | HighLimit                | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 78.72                           | 20.00 | 80.00     | 0                                    | 98.4 | 90       | 110                      |      |          |      |

| Sample ID <b>mb-2</b>       | SampType: <b>mblk</b>           |       |           | TestCode: <b>SM2320B: Alkalinity</b> |      |          |                          |      |          |      |
|-----------------------------|---------------------------------|-------|-----------|--------------------------------------|------|----------|--------------------------|------|----------|------|
| Client ID: <b>PBW</b>       | Batch ID: <b>R36738</b>         |       |           | RunNo: <b>36738</b>                  |      |          |                          |      |          |      |
| Prep Date:                  | Analysis Date: <b>8/24/2016</b> |       |           | SeqNo: <b>1138474</b>                |      |          | Units: <b>mg/L CaCO3</b> |      |          |      |
| Analyte                     | Result                          | PQL   | SPK value | SPK Ref Val                          | %REC | LowLimit | HighLimit                | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | ND                              | 20.00 |           |                                      |      |          |                          |      |          |      |

| Sample ID <b>ics-2</b>      | SampType: <b>ics</b>            |       |           | TestCode: <b>SM2320B: Alkalinity</b> |      |          |                          |      |          |      |
|-----------------------------|---------------------------------|-------|-----------|--------------------------------------|------|----------|--------------------------|------|----------|------|
| Client ID: <b>LCSW</b>      | Batch ID: <b>R36738</b>         |       |           | RunNo: <b>36738</b>                  |      |          |                          |      |          |      |
| Prep Date:                  | Analysis Date: <b>8/24/2016</b> |       |           | SeqNo: <b>1138475</b>                |      |          | Units: <b>mg/L CaCO3</b> |      |          |      |
| Analyte                     | Result                          | PQL   | SPK value | SPK Ref Val                          | %REC | LowLimit | HighLimit                | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 79.16                           | 20.00 | 80.00     | 0                                    | 99.0 | 90       | 110                      |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C28

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-19-2016

|                        |           |                |           |             |                                     |          |           |      |          |      |
|------------------------|-----------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID              | MB-27145  | SampType:      | MBLK      | TestCode:   | SM2540C MOD: Total Dissolved Solids |          |           |      |          |      |
| Client ID:             | PBW       | Batch ID:      | 27145     | RunNo:      | 36780                               |          |           |      |          |      |
| Prep Date:             | 8/24/2016 | Analysis Date: | 8/26/2016 | SeqNo:      | 1140141                             | Units:   | mg/L      |      |          |      |
| Analyte                | Result    | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | ND        | 20.0           |           |             |                                     |          |           |      |          |      |

|                        |           |                |           |             |                                     |          |           |      |          |      |
|------------------------|-----------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID              | LCS-27145 | SampType:      | LCS       | TestCode:   | SM2540C MOD: Total Dissolved Solids |          |           |      |          |      |
| Client ID:             | LCSW      | Batch ID:      | 27145     | RunNo:      | 36780                               |          |           |      |          |      |
| Prep Date:             | 8/24/2016 | Analysis Date: | 8/26/2016 | SeqNo:      | 1140142                             | Units:   | mg/L      |      |          |      |
| Analyte                | Result    | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | 1020      | 20.0           | 1000      | 0           | 102                                 | 80       | 120       |      |          |      |

|                        |                |                |           |             |                                     |          |           |      |          |      |
|------------------------|----------------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID              | 1608C28-004DMS | SampType:      | MS        | TestCode:   | SM2540C MOD: Total Dissolved Solids |          |           |      |          |      |
| Client ID:             | Upstream       | Batch ID:      | 27145     | RunNo:      | 36780                               |          |           |      |          |      |
| Prep Date:             | 8/24/2016      | Analysis Date: | 8/26/2016 | SeqNo:      | 1140156                             | Units:   | mg/L      |      |          |      |
| Analyte                | Result         | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Total Dissolved Solids | 2230           | 40.0           | 2000      | 178.0       | 102                                 | 80       | 120       |      |          | D    |

|                        |                 |                |           |             |                                     |          |           |       |          |      |
|------------------------|-----------------|----------------|-----------|-------------|-------------------------------------|----------|-----------|-------|----------|------|
| Sample ID              | 1608C28-004DMSD | SampType:      | MSD       | TestCode:   | SM2540C MOD: Total Dissolved Solids |          |           |       |          |      |
| Client ID:             | Upstream        | Batch ID:      | 27145     | RunNo:      | 36780                               |          |           |       |          |      |
| Prep Date:             | 8/24/2016       | Analysis Date: | 8/26/2016 | SeqNo:      | 1140157                             | Units:   | mg/L      |       |          |      |
| Analyte                | Result          | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD  | RPDLimit | Qual |
| Total Dissolved Solids | 2230            | 40.0           | 2000      | 178.0       | 103                                 | 80       | 120       | 0.269 | 5        | D    |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

## Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1608C28**

RcptNo: 1

Received by/date:

Logged By: **Lindsay Mangin**

**08/20/16**  
8/20/2016 9:15:00 AM

Completed By: **Lindsay Mangin**

8/22/2016 10:34:50 AM

Reviewed By:

**jc 08/22/16**

### Chain of Custody

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 samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

**12**  
( $\pm 2$  or  $>12$  unless noted)

Adjusted?

**NO**

Checked by:

**jc**

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 3.8                     | Good      | Yes         |         |           |           |









# Chain-of-Custody Record

Client: **Western Refining**

Mailing Address: **50 CR 4990**

**Bloomfield, NM 87413**

Phone #: **505-632-4135**

email or Fax#:

QA/QC Package:

☐ Standard

☐ Other

☒ EDD (Type) \_\_\_\_\_

☒ Level 4 (Full Validation)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: **San Juan River**

Date: **8-19-2016**

Project #: Annual

**PO#12615520**

Project Manager:

Sampler: **Michael A Wicker**

On Ice: ☒ Yes ☐ No

Sample Temperature: **38**

Date Time Matrix Sample Request ID

|         |      |                  |          |                   |                                |                    |
|---------|------|------------------|----------|-------------------|--------------------------------|--------------------|
| 8-19-16 | 1330 | H <sub>2</sub> O | Upstream | 5-VOA             | HCl                            | HEAL No<br>1608028 |
|         |      | H <sub>2</sub> O | Upstream | 1-500 ml<br>Amber | Cool                           | -004               |
|         |      | H <sub>2</sub> O | Upstream | 1-500 ml          | HNO <sub>3</sub>               | -004               |
|         |      | H <sub>2</sub> O | Upstream | 1-500 ml          |                                | -004               |
|         |      | H <sub>2</sub> O | Upstream | 1-125 ml          | H <sub>2</sub> SO <sub>4</sub> | -004               |
|         |      | H <sub>2</sub> O | Upstream | 1-125 ml          | HNO <sub>3</sub>               | -004               |

Trip Blank

8/22/16

Date: 8-19-16

Time: 1545

Relinquished by:

Signature

Date: 8/19/16

Time: 1746

Relinquished by:

Signature

Received by:

Signature

Date

Time

Received by:

Signature

Date

Time

Remarks:

Signature

Analysis Request

TPH (Method 418.1)

EDB (Method 504.1)

PAH (8310 or 8270SIMS)

RCRA 8 Metals Total

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / 8082 PCB's

8260B (VOA) BTEX, MTBE only

8270 (Semi-VOA)

DRO Ext.- 8015B

Dissolved Metals

Cations/Anions, TDS, EC, Alk, C

Air Bubbles (Y or N)



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

**Analytical Methods and Target Analytes**  
**Facility-Wide Groundwater Monitoring Plan - June 2012**  
**Western Refining - Bloomfield Refinery**

|                                                                      |
|----------------------------------------------------------------------|
| <b>VOCs (EPA Method 8260B) <sup>(1)</sup></b>                        |
| Target List                                                          |
| <i>Benzene</i>                                                       |
| <i>Toluene</i>                                                       |
| <i>Ethylbenzene</i>                                                  |
| <i>Xylenes</i>                                                       |
| <i>Methyl tert butyl ether (MTBE)</i>                                |
| <b>SVOCs - (EPA Method 8270)</b>                                     |
| Method List                                                          |
| <b>TPH-GRO (EPA Method 8015B)</b>                                    |
| Gasoline Range Organics                                              |
| <b>TPH-DRO (EPA Method 8015B)</b>                                    |
| Diesel Range Organics                                                |
| Motor Oil Range Organics                                             |
| <b>Total Carbon Dioxide (Laboratory Calculated)</b>                  |
| Dissolved CO <sub>2</sub>                                            |
| <b>Specific Conductivity (EPA Method 120.1 or Field Measurement)</b> |
| Specific Conductance                                                 |
| <b>TDS (EPA Method 160.1 or Field Measurement)</b>                   |
| Total Dissolved Solids                                               |
| <b>General Chemistry - Anions (EPA method 300.0)</b>                 |
| <i>Fluoride</i>                                                      |
| <i>Chloride</i>                                                      |
| <i>Bromide</i>                                                       |
| <i>Nitrogen, Nitrite (as N)</i>                                      |
| <i>Nitrogen, Nitrate (as N)</i>                                      |
| <i>Phosphorous, Orthophosphate (As P)</i>                            |
| <i>Sulfate</i>                                                       |
| <b>General Chemistry - Alkalinity (EPA Method 310.1)</b>             |
| <i>Alkalinity, Total</i>                                             |
| <i>Carbonate</i>                                                     |
| <i>Bicarbonate</i>                                                   |

|                                                         |
|---------------------------------------------------------|
| <b>Total Recoverable Metals (EPA Method 6010B/7470)</b> |
| Target List                                             |
| <i>Arsenic</i>                                          |
| <i>Barium</i>                                           |
| <i>Cadmium</i>                                          |
| <i>Chromium</i>                                         |
| <i>Lead</i>                                             |
| <i>Mercury</i>                                          |
| <i>Selenium</i>                                         |
| <i>Silver</i>                                           |
| Target List (for River Terrace Sampling Events Only)    |
| <i>Lead</i>                                             |
| <i>Mercury (DW-1 ONLY)</i>                              |
| <b>Dissolved Metals (EPA Method 6010B / 7470)</b>       |
| Target List (for Refinery Complex, Outfalls and River)  |
| <i>Arsenic</i>                                          |
| <i>Barium</i>                                           |
| <i>Cadmium</i>                                          |
| <i>Calcium</i>                                          |
| <i>Chromium</i>                                         |
| <i>Copper</i>                                           |
| <i>Iron</i>                                             |
| <i>Lead</i>                                             |
| <i>Magnesium</i>                                        |
| <i>Manganese</i>                                        |
| <i>Mercury</i>                                          |
| <i>Potassium</i>                                        |
| <i>Selenium</i>                                         |
| <i>Silver</i>                                           |
| <i>Sodium</i>                                           |
| <i>Uranium</i>                                          |
| <i>Zinc</i>                                             |

TPH = total petroleum hydrocarbons  
GRO = gasoline range organics  
VOCs = volatile organic compounds  
DRO = diesel range organics  
TDS = total dissolved solids

**Notes:**

- <sup>(1)</sup> VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009
- <sup>(2)</sup> Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



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

September 26, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: San Juan River Bluff 8-19-2016

OrderNo.: 1608C26

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 8/20/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

**Analytical Report**Lab Order: **1608C26**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff 8-19-2016  
**Lab ID:** 1608C26-001A

**Client Sample ID:** Outfall #3  
**Collection Date:** 8/19/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:59:12 PM | A36700             |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:59:12 PM | A36700             |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:59:12 PM | A36700             |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 5:59:12 PM | A36700             |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 5:59:12 PM | A36700             |
| Surr: 1,2-Dichloroethane-d4                  | 100    | 70-130 |      | %Rec  | 1  | 8/23/2016 5:59:12 PM | A36700             |
| Surr: 4-Bromofluorobenzene                   | 94.1   | 70-130 |      | %Rec  | 1  | 8/23/2016 5:59:12 PM | A36700             |
| Surr: Dibromofluoromethane                   | 98.0   | 70-130 |      | %Rec  | 1  | 8/23/2016 5:59:12 PM | A36700             |
| Surr: Toluene-d8                             | 97.1   | 70-130 |      | %Rec  | 1  | 8/23/2016 5:59:12 PM | A36700             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 1 of 16                                    |

**Analytical Report**Lab Order: **1608C26****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff 8-19-2016  
**Lab ID:** 1608C26-001B

**Client Sample ID:** Outfall #3  
**Collection Date:** 8/19/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF | Date Analyzed        | Batch ID            |
|-------------------------------------------------|--------|-------|------|------------------------|----|----------------------|---------------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Total Carbon Dioxide                            | 84     | 1.0   | H    | mg CO2/L               | 1  | 8/24/2016 3:38:46 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |    |                      | Analyst: <b>LGT</b> |
| Fluoride                                        | 0.19   | 0.10  |      | mg/L                   | 1  | 8/26/2016 1:59:56 PM | R36816              |
| Chloride                                        | 3.4    | 0.50  |      | mg/L                   | 1  | 8/26/2016 1:59:56 PM | R36816              |
| Bromide                                         | ND     | 0.10  |      | mg/L                   | 1  | 8/26/2016 1:59:56 PM | R36816              |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND     | 0.50  | H    | mg/L                   | 1  | 8/26/2016 1:59:56 PM | R36816              |
| Sulfate                                         | 48     | 0.50  |      | mg/L                   | 1  | 8/26/2016 1:59:56 PM | R36816              |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5  | 8/26/2016 5:18:30 PM | R36816              |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |    |                      | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO <sub>3</sub> )             | 93.56  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 3:38:46 PM | R36738              |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 3:38:46 PM | R36738              |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 93.56  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1  | 8/24/2016 3:38:46 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 2 of 16                                    |



**Analytical Report**Lab Order: **1608C26**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff 8-19-2016  
**Lab ID:** 1608C26-001C

**Client Sample ID:** Outfall #3  
**Collection Date:** 8/19/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                                   | Result | PQL     | Qual | Units | DF | Date Analyzed         | Batch ID            |
|--------------------------------------------|--------|---------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |         |      |       |    |                       | Analyst: <b>pmf</b> |
| Mercury                                    | ND     | 0.00020 |      | mg/L  | 1  | 8/24/2016 11:11:13 AM | 27127               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |         |      |       |    |                       | Analyst: <b>MED</b> |
| Arsenic                                    | ND     | 0.020   |      | mg/L  | 1  | 8/25/2016 2:18:32 PM  | 27124               |
| Barium                                     | 0.072  | 0.020   |      | mg/L  | 1  | 8/25/2016 2:18:32 PM  | 27124               |
| Cadmium                                    | ND     | 0.0020  |      | mg/L  | 1  | 8/25/2016 2:18:32 PM  | 27124               |
| Chromium                                   | ND     | 0.0060  |      | mg/L  | 1  | 8/25/2016 2:18:32 PM  | 27124               |
| Lead                                       | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 2:18:32 PM  | 27124               |
| Selenium                                   | ND     | 0.050   |      | mg/L  | 1  | 8/25/2016 2:18:32 PM  | 27124               |
| Silver                                     | ND     | 0.0050  |      | mg/L  | 1  | 8/25/2016 2:18:32 PM  | 27124               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 3 of 16                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C26

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff 8-19-2016  
**Lab ID:** 1608C26-001D

**Client Sample ID:** Outfall #3  
**Collection Date:** 8/19/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF                  | Date Analyzed         | Batch ID |
|-------------------------------------------|--------|---------|------|-------|---------------------|-----------------------|----------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       | Analyst: <b>pmf</b> |                       |          |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1                   | 8/24/2016 11:13:13 AM | 27127    |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       | Analyst: <b>MED</b> |                       |          |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Barium                                    | 0.069  | 0.020   |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Calcium                                   | 34     | 1.0     |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Iron                                      | ND     | 0.020   |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Magnesium                                 | 6.0    | 1.0     |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Manganese                                 | 0.0032 | 0.0020  |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Potassium                                 | 1.9    | 1.0     |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Sodium                                    | 18     | 1.0     |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1                   | 9/12/2016 12:24:33 PM | B37126   |
| Zinc                                      | 0.025  | 0.020   |      | mg/L  | 1                   | 9/7/2016 6:10:12 PM   | B37036   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 4 of 16                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C26

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff 8-19-2016  
**Lab ID:** 1608C26-001E

**Client Sample ID:** Outfall #3  
**Collection Date:** 8/19/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-----------------------------------------|--------|----------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8015M/D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: TOM |
| Diesel Range Organics (DRO)             | ND     | 1.0      |      | mg/L  | 1  | 8/23/2016 2:50:27 PM | 27123        |
| Motor Oil Range Organics (MRO)          | ND     | 5.0      |      | mg/L  | 1  | 8/23/2016 2:50:27 PM | 27123        |
| Surr: DNOP                              | 107    | 77.1-144 |      | %Rec  | 1  | 8/23/2016 2:50:27 PM | 27123        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 5 of 16                                    |

**Analytical Report**Lab Order: **1608C26**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff 8-19-2016  
**Lab ID:** 1608C26-001F

**Client Sample ID:** Outfall #3  
**Collection Date:** 8/19/2016 2:10:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|-----------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Gasoline Range Organics (GRO)           | ND     | 0.050  |      | mg/L  | 1  | 8/23/2016 5:59:12 PM | R36700             |
| Surr: BFB                               | 99.1   | 70-130 |      | %Rec  | 1  | 8/23/2016 5:59:12 PM | R36700             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C26**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff 8-19-2016  
**Lab ID:** 1608C26-002A

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Matrix:** Trip Blank

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID           |
|----------------------------------------------|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:28:00 PM | A36700             |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:28:00 PM | A36700             |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:28:00 PM | A36700             |
| Methyl tert-butyl ether (MTBE)               | ND     | 1.0    |      | µg/L  | 1  | 8/23/2016 6:28:00 PM | A36700             |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 8/23/2016 6:28:00 PM | A36700             |
| Surr: 1,2-Dichloroethane-d4                  | 98.6   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:28:00 PM | A36700             |
| Surr: 4-Bromofluorobenzene                   | 98.2   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:28:00 PM | A36700             |
| Surr: Dibromofluoromethane                   | 98.6   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:28:00 PM | A36700             |
| Surr: Toluene-d8                             | 99.7   | 70-130 |      | %Rec  | 1  | 8/23/2016 6:28:00 PM | A36700             |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 7 of 16                                    |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C26

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-19-2016

|                                  |            |                |                  |             |                                 |          |             |      |          |      |
|----------------------------------|------------|----------------|------------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID                        | <b>MB</b>  | SampType:      | <b>MBLK</b>      | TestCode:   | <b>EPA Method 300.0: Anions</b> |          |             |      |          |      |
| Client ID:                       | <b>PBW</b> | Batch ID:      | <b>R36816</b>    | RunNo:      | <b>36816</b>                    |          |             |      |          |      |
| Prep Date:                       |            | Analysis Date: | <b>8/26/2016</b> | SeqNo:      | <b>1141089</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                          | Result     | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Fluoride                         | ND         | 0.10           |                  |             |                                 |          |             |      |          |      |
| Chloride                         | ND         | 0.50           |                  |             |                                 |          |             |      |          |      |
| Bromide                          | ND         | 0.10           |                  |             |                                 |          |             |      |          |      |
| Phosphorus, Orthophosphate (As P | ND         | 0.50           |                  |             |                                 |          |             |      |          |      |
| Sulfate                          | ND         | 0.50           |                  |             |                                 |          |             |      |          |      |
| Nitrate+Nitrite as N             | ND         | 0.20           |                  |             |                                 |          |             |      |          |      |

|                                  |             |                |                  |             |                                 |          |             |      |          |      |
|----------------------------------|-------------|----------------|------------------|-------------|---------------------------------|----------|-------------|------|----------|------|
| Sample ID                        | <b>LCS</b>  | SampType:      | <b>LCS</b>       | TestCode:   | <b>EPA Method 300.0: Anions</b> |          |             |      |          |      |
| Client ID:                       | <b>LCSW</b> | Batch ID:      | <b>R36816</b>    | RunNo:      | <b>36816</b>                    |          |             |      |          |      |
| Prep Date:                       |             | Analysis Date: | <b>8/26/2016</b> | SeqNo:      | <b>1141090</b>                  | Units:   | <b>mg/L</b> |      |          |      |
| Analyte                          | Result      | PQL            | SPK value        | SPK Ref Val | %REC                            | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Fluoride                         | 0.50        | 0.10           | 0.5000           | 0           | 100                             | 90       | 110         |      |          |      |
| Chloride                         | 4.6         | 0.50           | 5.000            | 0           | 93.0                            | 90       | 110         |      |          |      |
| Bromide                          | 2.4         | 0.10           | 2.500            | 0           | 94.1                            | 90       | 110         |      |          |      |
| Phosphorus, Orthophosphate (As P | 4.7         | 0.50           | 5.000            | 0           | 93.9                            | 90       | 110         |      |          |      |
| Sulfate                          | 9.4         | 0.50           | 10.00            | 0           | 94.4                            | 90       | 110         |      |          |      |
| Nitrate+Nitrite as N             | 3.4         | 0.20           | 3.500            | 0           | 95.9                            | 90       | 110         |      |          |      |

### Qualifiers:

|                                                         |                                                             |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C26

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-19-2016

|                             |           |     |                          |             |                                            |          |             |      |          |      |
|-----------------------------|-----------|-----|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | LCS-27123 |     | SampType: LCS            |             | TestCode: EPA Method 8015M/D: Diesel Range |          |             |      |          |      |
| Client ID:                  | LCSW      |     | Batch ID: 27123          |             | RunNo: 36682                               |          |             |      |          |      |
| Prep Date:                  | 8/23/2016 |     | Analysis Date: 8/23/2016 |             | SeqNo: 1136867                             |          | 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           | 101                                        | 71.3     | 139         |      |          |      |
| Surr: DNOP                  | 0.52      |     | 0.5000                   |             | 104                                        | 77.1     | 144         |      |          |      |

|                                |           |     |                          |             |                                            |          |             |      |          |      |
|--------------------------------|-----------|-----|--------------------------|-------------|--------------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | MB-27123  |     | SampType: MBLK           |             | TestCode: EPA Method 8015M/D: Diesel Range |          |             |      |          |      |
| Client ID:                     | PBW       |     | Batch ID: 27123          |             | RunNo: 36682                               |          |             |      |          |      |
| Prep Date:                     | 8/23/2016 |     | Analysis Date: 8/23/2016 |             | SeqNo: 1136868                             |          | 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                     | 1.0       |     | 1.000                    |             | 105                                        | 77.1     | 144         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C26

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-19-2016

|                             |           |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|-----------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 100ng lcs | SampType:      | LCS       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | LCSW      | Batch ID:      | A36700    | RunNo:      | 36700                                 |          |           |      |          |      |
| Prep Date:                  |           | Analysis Date: | 8/23/2016 | SeqNo:      | 1137398                               | Units:   | µg/L      |      |          |      |
| Analyte                     | Result    | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 20        | 1.0            | 20.00     | 0           | 98.7                                  | 70       | 130       |      |          |      |
| Toluene                     | 20        | 1.0            | 20.00     | 0           | 99.6                                  | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10        |                | 10.00     |             | 103                                   | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.9       |                | 10.00     |             | 99.2                                  | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.7       |                | 10.00     |             | 97.0                                  | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 10        |                | 10.00     |             | 101                                   | 70       | 130       |      |          |      |

|                                |        |                |           |             |                                       |          |           |      |          |      |
|--------------------------------|--------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                      | rb     | SampType:      | MBLK      | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                     | PBW    | Batch ID:      | A36700    | RunNo:      | 36700                                 |          |           |      |          |      |
| Prep Date:                     |        | Analysis Date: | 8/23/2016 | SeqNo:      | 1137400                               | Units:   | µg/L      |      |          |      |
| Analyte                        | Result | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Toluene                        | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Ethylbenzene                   | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0            |           |             |                                       |          |           |      |          |      |
| Xylenes, Total                 | ND     | 1.5            |           |             |                                       |          |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4    | 10     |                | 10.00     |             | 102                                   | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene     | 10     |                | 10.00     |             | 99.6                                  | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane     | 9.9    |                | 10.00     |             | 98.5                                  | 70       | 130       |      |          |      |
| Surr: Toluene-d8               | 9.9    |                | 10.00     |             | 98.8                                  | 70       | 130       |      |          |      |

### Qualifiers:

|    |                                                       |    |                                                           |
|----|-------------------------------------------------------|----|-----------------------------------------------------------|
| *  | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           |
| D  | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
| H  | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |
| ND | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
| R  | RPD outside accepted recovery limits                  | RL | Reporting Detection Limit                                 |
| S  | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C26

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-19-2016

|            |           |         |                |             |      |           |                          |      |          |      |  |
|------------|-----------|---------|----------------|-------------|------|-----------|--------------------------|------|----------|------|--|
| Sample ID  | MB-27127  |         | SampType:      | MBLK        |      | TestCode: | EPA Method 7470: Mercury |      |          |      |  |
| Client ID: | PBW       |         | Batch ID:      | 27127       |      | RunNo:    | 36730                    |      |          |      |  |
| Prep Date: | 8/23/2016 |         | Analysis Date: | 8/24/2016   |      | SeqNo:    | 1138256                  |      | Units:   | mg/L |  |
| Analyte    | Result    | PQL     | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                | %RPD | RPDLimit | Qual |  |
| Mercury    | ND        | 0.00020 |                |             |      |           |                          |      |          |      |  |

|            |           |         |           |                |           |          |           |                          |          |        |      |
|------------|-----------|---------|-----------|----------------|-----------|----------|-----------|--------------------------|----------|--------|------|
| Sample ID  | LCS-27127 |         |           | SampType:      | LCS       |          | TestCode: | EPA Method 7470: Mercury |          |        |      |
| Client ID: | LCSW      |         |           | Batch ID:      | 27127     |          | RunNo:    | 36730                    |          |        |      |
| Prep Date: | 8/23/2016 |         |           | Analysis Date: | 8/24/2016 |          | SeqNo:    | 1138257                  |          | Units: | mg/L |
| Analyte    | Result    | PQL     | SPK value | SPK Ref Val    | %REC      | LowLimit | HighLimit | %RPD                     | RPDLimit | Qual   |      |
| Mercury    | 0.0051    | 0.00020 | 0.005000  | 0              | 102       | 80       | 120       |                          |          |        |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C26

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-19-2016

|            |             |                |                 |           |                                           |        |             |  |  |  |
|------------|-------------|----------------|-----------------|-----------|-------------------------------------------|--------|-------------|--|--|--|
| Sample ID  | <b>MB-B</b> | SampType:      | <b>MBLK</b>     | TestCode: | <b>EPA Method 6010B: Dissolved Metals</b> |        |             |  |  |  |
| Client ID: | <b>PBW</b>  | Batch ID:      | <b>B37036</b>   | RunNo:    | <b>37036</b>                              |        |             |  |  |  |
| Prep Date: |             | Analysis Date: | <b>9/7/2016</b> | SeqNo:    | <b>1147839</b>                            | Units: | <b>mg/L</b> |  |  |  |

| Analyte   | Result | PQL    | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|-----------|--------|--------|-----------|-------------|------|----------|-----------|------|----------|------|
| Arsenic   | ND     | 0.020  |           |             |      |          |           |      |          |      |
| Barium    | ND     | 0.020  |           |             |      |          |           |      |          |      |
| Cadmium   | ND     | 0.0020 |           |             |      |          |           |      |          |      |
| Calcium   | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Chromium  | ND     | 0.0060 |           |             |      |          |           |      |          |      |
| Copper    | ND     | 0.0060 |           |             |      |          |           |      |          |      |
| Iron      | ND     | 0.020  |           |             |      |          |           |      |          |      |
| Lead      | ND     | 0.0050 |           |             |      |          |           |      |          |      |
| Magnesium | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Manganese | ND     | 0.0020 |           |             |      |          |           |      |          |      |
| Potassium | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Selenium  | ND     | 0.050  |           |             |      |          |           |      |          |      |
| Silver    | ND     | 0.0050 |           |             |      |          |           |      |          |      |
| Sodium    | ND     | 1.0    |           |             |      |          |           |      |          |      |
| Zinc      | ND     | 0.020  |           |             |      |          |           |      |          |      |

|            |              |                |                 |           |                                           |        |             |  |  |  |
|------------|--------------|----------------|-----------------|-----------|-------------------------------------------|--------|-------------|--|--|--|
| Sample ID  | <b>LCS-B</b> | SampType:      | <b>LCS</b>      | TestCode: | <b>EPA Method 6010B: Dissolved Metals</b> |        |             |  |  |  |
| Client ID: | <b>LCSW</b>  | Batch ID:      | <b>B37036</b>   | RunNo:    | <b>37036</b>                              |        |             |  |  |  |
| Prep Date: |              | Analysis Date: | <b>9/7/2016</b> | SeqNo:    | <b>1147840</b>                            | Units: | <b>mg/L</b> |  |  |  |

| Analyte   | Result | PQL    | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|-----------|--------|--------|-----------|-------------|------|----------|-----------|------|----------|------|
| Arsenic   | 0.47   | 0.020  | 0.5000    | 0           | 94.4 | 80       | 120       |      |          |      |
| Barium    | 0.46   | 0.020  | 0.5000    | 0           | 92.1 | 80       | 120       |      |          |      |
| Cadmium   | 0.47   | 0.0020 | 0.5000    | 0           | 93.7 | 80       | 120       |      |          |      |
| Calcium   | 57     | 1.0    | 50.00     | 0           | 114  | 80       | 120       |      |          |      |
| Chromium  | 0.46   | 0.0060 | 0.5000    | 0           | 92.1 | 80       | 120       |      |          |      |
| Copper    | 0.45   | 0.0060 | 0.5000    | 0           | 90.9 | 80       | 120       |      |          |      |
| Iron      | 0.47   | 0.020  | 0.5000    | 0           | 93.2 | 80       | 120       |      |          |      |
| Lead      | 0.46   | 0.0050 | 0.5000    | 0           | 91.2 | 80       | 120       |      |          |      |
| Magnesium | 58     | 1.0    | 50.00     | 0           | 116  | 80       | 120       |      |          |      |
| Manganese | 0.45   | 0.0020 | 0.5000    | 0           | 90.2 | 80       | 120       |      |          |      |
| Potassium | 56     | 1.0    | 50.00     | 0           | 112  | 80       | 120       |      |          |      |
| Selenium  | 0.46   | 0.050  | 0.5000    | 0           | 93.0 | 80       | 120       |      |          |      |
| Silver    | 0.095  | 0.0050 | 0.1000    | 0           | 95.0 | 80       | 120       |      |          |      |
| Sodium    | 57     | 1.0    | 50.00     | 0           | 114  | 80       | 120       |      |          |      |
| Zinc      | 0.46   | 0.020  | 0.5000    | 0           | 91.7 | 80       | 120       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C26

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-19-2016

|            |        |      |                          |             |                                              |          |             |      |          |      |
|------------|--------|------|--------------------------|-------------|----------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-B   |      | SampType: MBLK           |             | TestCode: EPA Method 6010B: Dissolved Metals |          |             |      |          |      |
| Client ID: | PBW    |      | Batch ID: B37126         |             | RunNo: 37126                                 |          |             |      |          |      |
| Prep Date: |        |      | Analysis Date: 9/12/2016 |             | SeqNo: 1151181                               |          | Units: mg/L |      |          |      |
| Analyte    | Result | PQL  | SPK value                | SPK Ref Val | %REC                                         | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Uranium    | ND     | 0.10 |                          |             |                                              |          |             |      |          |      |

|            |        |      |                          |             |                                              |          |             |      |          |      |
|------------|--------|------|--------------------------|-------------|----------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-B  |      | SampType: LCS            |             | TestCode: EPA Method 6010B: Dissolved Metals |          |             |      |          |      |
| Client ID: | LCSW   |      | Batch ID: B37126         |             | RunNo: 37126                                 |          |             |      |          |      |
| Prep Date: |        |      | Analysis Date: 9/12/2016 |             | SeqNo: 1151182                               |          | Units: mg/L |      |          |      |
| Analyte    | Result | PQL  | SPK value                | SPK Ref Val | %REC                                         | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Uranium    | 0.51   | 0.10 | 0.5000                   | 0           | 101                                          | 80       | 120         |      |          |      |

|            |                |      |                          |             |                                              |          |             |      |          |      |
|------------|----------------|------|--------------------------|-------------|----------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | 1608C26-001DMS |      | SampType: MS             |             | TestCode: EPA Method 6010B: Dissolved Metals |          |             |      |          |      |
| Client ID: | Outfall #3     |      | Batch ID: B37126         |             | RunNo: 37126                                 |          |             |      |          |      |
| Prep Date: |                |      | Analysis Date: 9/12/2016 |             | SeqNo: 1151243                               |          | Units: mg/L |      |          |      |
| Analyte    | Result         | PQL  | SPK value                | SPK Ref Val | %REC                                         | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Uranium    | 0.52           | 0.10 | 0.5000                   | 0.01098     | 101                                          | 75       | 125         |      |          |      |

|            |                 |      |                |             |      |           |                                    |        |          |      |  |
|------------|-----------------|------|----------------|-------------|------|-----------|------------------------------------|--------|----------|------|--|
| Sample ID  | 1608C26-001DMSD |      | SampType:      | MSD         |      | TestCode: | EPA Method 6010B: Dissolved Metals |        |          |      |  |
| Client ID: | Outfall #3      |      | Batch ID:      | B37126      |      | RunNo:    | 37126                              |        |          |      |  |
| Prep Date: |                 |      | Analysis Date: | 9/12/2016   |      | SeqNo:    | 1151244                            | Units: | mg/L     |      |  |
| Analyte    | Result          | PQL  | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                          | %RPD   | RPDLimit | Qual |  |
| Uranium    | 0.51            | 0.10 | 0.5000         | 0.01098     | 101  | 75        | 125                                | 0.595  | 20       |      |  |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C26

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-19-2016

|            |                  |        |                |                  |      |           |                                            |        |             |      |
|------------|------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>MB-27124</b>  |        | SampType:      | <b>MBLK</b>      |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>PBW</b>       |        | Batch ID:      | <b>27124</b>     |      | RunNo:    | <b>36757</b>                               |        |             |      |
| Prep Date: | <b>8/23/2016</b> |        | Analysis Date: | <b>8/25/2016</b> |      | SeqNo:    | <b>1139271</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | ND               | 0.020  |                |                  |      |           |                                            |        |             |      |
| Barium     | ND               | 0.020  |                |                  |      |           |                                            |        |             |      |
| Cadmium    | ND               | 0.0020 |                |                  |      |           |                                            |        |             |      |
| Chromium   | ND               | 0.0060 |                |                  |      |           |                                            |        |             |      |
| Lead       | ND               | 0.0050 |                |                  |      |           |                                            |        |             |      |
| Selenium   | ND               | 0.050  |                |                  |      |           |                                            |        |             |      |
| Silver     | ND               | 0.0050 |                |                  |      |           |                                            |        |             |      |

|            |                  |        |                |                  |      |           |                                            |        |             |      |
|------------|------------------|--------|----------------|------------------|------|-----------|--------------------------------------------|--------|-------------|------|
| Sample ID  | <b>LCS-27124</b> |        | SampType:      | <b>LCS</b>       |      | TestCode: | <b>EPA 6010B: Total Recoverable Metals</b> |        |             |      |
| Client ID: | <b>LCSW</b>      |        | Batch ID:      | <b>27124</b>     |      | RunNo:    | <b>36757</b>                               |        |             |      |
| Prep Date: | <b>8/23/2016</b> |        | Analysis Date: | <b>8/25/2016</b> |      | SeqNo:    | <b>1139272</b>                             | Units: | <b>mg/L</b> |      |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val      | %REC | LowLimit  | HighLimit                                  | %RPD   | RPDLimit    | Qual |
| Arsenic    | 0.50             | 0.020  | 0.5000         | 0                | 100  | 80        | 120                                        |        |             |      |
| Barium     | 0.48             | 0.020  | 0.5000         | 0                | 96.6 | 80        | 120                                        |        |             |      |
| Cadmium    | 0.49             | 0.0020 | 0.5000         | 0                | 97.7 | 80        | 120                                        |        |             |      |
| Chromium   | 0.48             | 0.0060 | 0.5000         | 0                | 96.6 | 80        | 120                                        |        |             |      |
| Lead       | 0.47             | 0.0050 | 0.5000         | 0                | 94.2 | 80        | 120                                        |        |             |      |
| Selenium   | 0.48             | 0.050  | 0.5000         | 0                | 95.2 | 80        | 120                                        |        |             |      |
| Silver     | 0.10             | 0.0050 | 0.1000         | 0                | 100  | 80        | 120                                        |        |             |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C26

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-19-2016

|                               |               |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | 2.5ug gro lcs | SampType:      | LCS       | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | LCSW          | Batch ID:      | R36700    | RunNo:      | 36700                            |          |           |      |          |      |
| Prep Date:                    |               | Analysis Date: | 8/23/2016 | SeqNo:      | 1137274                          | Units:   | mg/L      |      |          |      |
| Analyte                       | Result        | PQL            | SPK value | SPK Ref Val | %REC                             | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.41          | 0.050          | 0.5000    | 0           | 82.5                             | 75.4     | 118       |      |          |      |
| Surr: BFB                     | 10            |                | 10.00     |             | 101                              | 70       | 130       |      |          |      |

|                               |        |                |           |             |                                  |          |           |      |          |      |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID                     | rb     | SampType:      | MBLK      | TestCode:   | EPA Method 8015D: Gasoline Range |          |           |      |          |      |
| Client ID:                    | PBW    | Batch ID:      | R36700    | RunNo:      | 36700                            |          |           |      |          |      |
| Prep Date:                    |        | Analysis Date: | 8/23/2016 | SeqNo:      | 1137275                          | 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                     | 9.8    |                | 10.00     |             | 98.1                             | 70       | 130       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1608C26

26-Sep-16

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-19-2016

|                             |        |       |                |             |      |           |                     |      |          |            |  |
|-----------------------------|--------|-------|----------------|-------------|------|-----------|---------------------|------|----------|------------|--|
| Sample ID                   | mb-1   |       | SampType:      | mblk        |      | TestCode: | SM2320B: Alkalinity |      |          |            |  |
| Client ID:                  | PBW    |       | Batch ID:      | R36738      |      | RunNo:    | 36738               |      |          |            |  |
| Prep Date:                  |        |       | Analysis Date: | 8/24/2016   |      | SeqNo:    | 1138449             |      | Units:   | mg/L CaCO3 |  |
| Analyte                     | Result | PQL   | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit           | %RPD | RPDLimit | Qual       |  |
| Total Alkalinity (as CaCO3) | ND     | 20.00 |                |             |      |           |                     |      |          |            |  |

|                             |        |       |                          |             |                               |          |                   |      |          |      |
|-----------------------------|--------|-------|--------------------------|-------------|-------------------------------|----------|-------------------|------|----------|------|
| Sample ID                   | Ics-1  |       | SampType: Ics            |             | TestCode: SM2320B: Alkalinity |          |                   |      |          |      |
| Client ID:                  | LCSW   |       | Batch ID: R36738         |             | RunNo: 36738                  |          |                   |      |          |      |
| Prep Date:                  |        |       | Analysis Date: 8/24/2016 |             | SeqNo: 1138450                |          | Units: mg/L CaCO3 |      |          |      |
| Analyte                     | Result | PQL   | SPK value                | SPK Ref Val | %REC                          | LowLimit | HighLimit         | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 78.72  | 20.00 | 80.00                    | 0           | 98.4                          | 90       | 110               |      |          |      |

|                             |        |       |                |             |      |           |                     |      |          |            |  |
|-----------------------------|--------|-------|----------------|-------------|------|-----------|---------------------|------|----------|------------|--|
| Sample ID                   | mb-2   |       | SampType:      | mblk        |      | TestCode: | SM2320B: Alkalinity |      |          |            |  |
| Client ID:                  | PBW    |       | Batch ID:      | R36738      |      | RunNo:    | 36738               |      |          |            |  |
| Prep Date:                  |        |       | Analysis Date: | 8/24/2016   |      | SeqNo:    | 1138474             |      | Units:   | mg/L CaCO3 |  |
| Analyte                     | Result | PQL   | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit           | %RPD | RPDLimit | Qual       |  |
| Total Alkalinity (as CaCO3) | ND     | 20.00 |                |             |      |           |                     |      |          |            |  |

|                             |        |       |                          |             |                               |          |                   |      |          |      |
|-----------------------------|--------|-------|--------------------------|-------------|-------------------------------|----------|-------------------|------|----------|------|
| Sample ID                   | Ics-2  |       | SampType: Ics            |             | TestCode: SM2320B: Alkalinity |          |                   |      |          |      |
| Client ID:                  | LCSW   |       | Batch ID: R36738         |             | RunNo: 36738                  |          |                   |      |          |      |
| Prep Date:                  |        |       | Analysis Date: 8/24/2016 |             | SeqNo: 1138475                |          | Units: mg/L CaCO3 |      |          |      |
| Analyte                     | Result | PQL   | SPK value                | SPK Ref Val | %REC                          | LowLimit | HighLimit         | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 79.16  | 20.00 | 80.00                    | 0           | 99.0                          | 90       | 110               |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



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

## Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1808C26**

RcptNo: 1

Received by/date:

Logged By: **Lindsay Mangin**

**08/20/16**  
**8/20/2016 9:15:00 AM**

Completed By: **Lindsay Mangin**

**8/22/2016 9:57:20 AM**

Reviewed By:

### Chain of Custody

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 samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

**B3**  
**(2) or >12 unless noted**

Adjusted?

**No**

Checked by:

**as**

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 3.8                     | Good      | Yes         |         |           |           |





**Analytical Methods and Target Analytes**  
**Facility-Wide Groundwater Monitoring Plan - June 2012**  
**Western Refining - Bloomfield Refinery**

|                                                                      |
|----------------------------------------------------------------------|
| <b>VOCs (EPA Method 8260B) <sup>(1)</sup></b>                        |
| Target List                                                          |
| <i>Benzene</i>                                                       |
| <i>Toluene</i>                                                       |
| <i>Ethylbenzene</i>                                                  |
| <i>Xylenes</i>                                                       |
| <i>Methyl tert butyl ether (MTBE)</i>                                |
| <b>SVOCs - (EPA Method 8270)</b>                                     |
| Method List                                                          |
| <b>TPH-GRO (EPA Method 8015B)</b>                                    |
| Gasoline Range Organics                                              |
| <b>TPH-DRO (EPA Method 8015B)</b>                                    |
| Diesel Range Organics                                                |
| Motor Oil Range Organics                                             |
| <b>Total Carbon Dioxide (Laboratory Calculated)</b>                  |
| Dissolved CO <sub>2</sub>                                            |
| <b>Specific Conductivity (EPA Method 120.1 or Field Measurement)</b> |
| Specific Conductance                                                 |
| <b>TDS (EPA Method 160.1 or Field Measurement)</b>                   |
| Total Dissolved Solids                                               |
| <b>General Chemistry - Anions (EPA method 300.0)</b>                 |
| <i>Fluoride</i>                                                      |
| <i>Chloride</i>                                                      |
| <i>Bromide</i>                                                       |
| <i>Nitrogen, Nitrite (as N)</i>                                      |
| <i>Nitrogen, Nitrate (as N)</i>                                      |
| <i>Phosphorous, Orthophosphate (As P)</i>                            |
| <i>Sulfate</i>                                                       |
| <b>General Chemistry - Alkalinity (EPA Method 310.1)</b>             |
| <i>Alkalinity, Total</i>                                             |
| <i>Carbonate</i>                                                     |
| <i>Bicarbonate</i>                                                   |

|                                                         |
|---------------------------------------------------------|
| <b>Total Recoverable Metals (EPA Method 6010B/7470)</b> |
| Target List                                             |
| <i>Arsenic</i>                                          |
| <i>Barium</i>                                           |
| <i>Cadmium</i>                                          |
| <i>Chromium</i>                                         |
| <i>Lead</i>                                             |
| <i>Mercury</i>                                          |
| <i>Selenium</i>                                         |
| <i>Silver</i>                                           |
| Target List (for River Terrace Sampling Events Only)    |
| <i>Lead</i>                                             |
| <i>Mercury (DW-1 ONLY)</i>                              |
| <b>Dissolved Metals (EPA Method 6010B / 7470)</b>       |
| Target List (for Refinery Complex, Outfalls and River)  |
| <i>Arsenic</i>                                          |
| <i>Barium</i>                                           |
| <i>Cadmium</i>                                          |
| <i>Calcium</i>                                          |
| <i>Chromium</i>                                         |
| <i>Copper</i>                                           |
| <i>Iron</i>                                             |
| <i>Lead</i>                                             |
| <i>Magnesium</i>                                        |
| <i>Manganese</i>                                        |
| <i>Mercury</i>                                          |
| <i>Potassium</i>                                        |
| <i>Selenium</i>                                         |
| <i>Silver</i>                                           |
| <i>Sodium</i>                                           |
| <i>Uranium</i>                                          |
| <i>Zinc</i>                                             |

TPH = total petroleum hydrocarbons  
GRO = gasoline range organics  
VOCs = volatile organic compounds  
DRO = diesel range organics  
TDS = total dissolved solids

**Notes:**

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



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

September 26, 2016

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL:

FAX

RE: RCRA Wells 8-22-2016

OrderNo.: 1608C81

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/23/2016 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 [www.hallenvironmental.com](http://www.hallenvironmental.com) 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Analytical Report

Lab Order: 1608C81

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-001A

**Client Sample ID:** MW-64  
**Collection Date:** 8/22/2016 11:30:00 AM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL    | Qual | Units        | DF | Date Analyzed         | Batch ID |
|-----------------------------------------|--------|--------|------|--------------|----|-----------------------|----------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |        |      | Analyst: DJF |    |                       |          |
| Gasoline Range Organics (GRO)           | ND     | 0.050  |      | mg/L         | 1  | 8/26/2016 2:52:59 PM  | G36811   |
| Surr: BFB                               | 99.5   | 70-130 |      | %Rec         | 1  | 8/26/2016 2:52:59 PM  | G36811   |
| <b>EPA METHOD 8260B: VOLATILES</b>      |        |        |      | Analyst: BCN |    |                       |          |
| Benzene                                 | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Toluene                                 | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Ethylbenzene                            | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Methyl tert-butyl ether (MTBE)          | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,2,4-Trimethylbenzene                  | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,3,5-Trimethylbenzene                  | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,2-Dichloroethane (EDC)                | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,2-Dibromoethane (EDB)                 | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Naphthalene                             | ND     | 2.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1-Methylnaphthalene                     | ND     | 4.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 2-Methylnaphthalene                     | ND     | 4.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Acetone                                 | ND     | 10     |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Bromobenzene                            | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Bromodichloromethane                    | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Bromoform                               | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Bromomethane                            | ND     | 3.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 2-Butanone                              | ND     | 10     |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Carbon disulfide                        | ND     | 10     |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Carbon Tetrachloride                    | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Chlorobenzene                           | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Chloroethane                            | ND     | 2.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Chloroform                              | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Chloromethane                           | ND     | 3.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 2-Chlorotoluene                         | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 4-Chlorotoluene                         | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| cis-1,2-DCE                             | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| cis-1,3-Dichloropropene                 | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,2-Dibromo-3-chloropropane             | ND     | 2.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Dibromochloromethane                    | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Dibromomethane                          | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,2-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,3-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,4-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Dichlorodifluoromethane                 | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,1-Dichloroethane                      | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,1-Dichloroethene                      | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,2-Dichloropropane                     | ND     | 1.0    |      | µg/L         | 1  | 8/24/2016 11:49:00 PM | B36743   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 1 of 56                                    |

**Analytical Report**

Lab Order: 1608C81

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-001A

**Client Sample ID:** MW-64  
**Collection Date:** 8/22/2016 11:30:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units               | DF | Date Analyzed         | Batch ID |
|------------------------------------|--------|--------|------|---------------------|----|-----------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      | Analyst: <b>BCN</b> |    |                       |          |
| 1,3-Dichloropropane                | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 2,2-Dichloropropane                | ND     | 2.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,1-Dichloropropene                | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Hexachlorobutadiene                | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 2-Hexanone                         | ND     | 10     |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Styrene                            | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Surr: 1,2-Dichloroethane-d4        | 101    | 70-130 |      | %Rec                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Surr: 4-Bromofluorobenzene         | 101    | 70-130 |      | %Rec                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Surr: Dibromofluoromethane         | 95.5   | 70-130 |      | %Rec                | 1  | 8/24/2016 11:49:00 PM | B36743   |
| Surr: Toluene-d8                   | 99.6   | 70-130 |      | %Rec                | 1  | 8/24/2016 11:49:00 PM | B36743   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 2 of 56                                    |

**Analytical Report**Lab Order: **1608C81**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-001C

**Client Sample ID:** MW-64  
**Collection Date:** 8/22/2016 11:30:00 AM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/24/2016 1:25:15 PM | 27141               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/24/2016 1:25:15 PM | 27141               |
| Surr: DNOP                            | 130    | 67.9-149 |      | %Rec  | 1  | 8/24/2016 1:25:15 PM | 27141               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-001D

**Client Sample ID:** MW-64  
**Collection Date:** 8/22/2016 11:30:00 AM  
**Matrix:** Aqueous

| Analyses                          | Result | PQL   | Qual | Units      | DF  | Date Analyzed         | Batch ID     |
|-----------------------------------|--------|-------|------|------------|-----|-----------------------|--------------|
| <b>CARBON DIOXIDE</b>             |        |       |      |            |     |                       | Analyst: JRR |
| Total Carbon Dioxide              | 260    | 1.0   | H    | mg CO2/L   | 1   | 8/24/2016 10:56:06 PM | R36738       |
| <b>EPA METHOD 300.0: ANIONS</b>   |        |       |      |            |     |                       | Analyst: MRA |
| Fluoride                          | ND     | 10    |      | mg/L       | 100 | 8/24/2016 4:55:06 AM  | A36713       |
| Chloride                          | 860    | 50    | *    | mg/L       | 100 | 8/24/2016 3:13:12 PM  | R36722       |
| Nitrogen, Nitrite (As N)          | ND     | 10    |      | mg/L       | 100 | 8/24/2016 4:55:06 AM  | A36713       |
| Bromide                           | 5.1    | 2.0   |      | mg/L       | 20  | 8/24/2016 10:40:14 AM | R36722       |
| Nitrogen, Nitrate (As N)          | 58     | 2.0   | *    | mg/L       | 20  | 8/24/2016 10:40:14 AM | R36722       |
| Phosphorus, Orthophosphate (As P) | ND     | 50    |      | mg/L       | 100 | 8/24/2016 4:55:06 AM  | A36713       |
| Sulfate                           | 1500   | 50    | *    | mg/L       | 100 | 8/24/2016 3:13:12 PM  | R36722       |
| <b>SM2320B: ALKALINITY</b>        |        |       |      |            |     |                       | Analyst: JRR |
| Bicarbonate (As CaCO3)            | 279.0  | 20.00 |      | mg/L CaCO3 | 1   | 8/24/2016 10:56:06 PM | R36738       |
| Carbonate (As CaCO3)              | ND     | 2.000 |      | mg/L CaCO3 | 1   | 8/24/2016 10:56:06 PM | R36738       |
| Total Alkalinity (as CaCO3)       | 279.0  | 20.00 |      | mg/L CaCO3 | 1   | 8/24/2016 10:56:06 PM | R36738       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 4 of 56                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-001E

**Client Sample ID:** MW-64  
**Collection Date:** 8/22/2016 11:30:00 AM  
**Matrix:** Aqueous

| Analyses                                   | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID            |
|--------------------------------------------|--------|---------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |         |      |       |    |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND     | 0.00020 |      | mg/L  | 1  | 9/2/2016 12:26:04 PM | 27318               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |         |      |       |    |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND     | 0.020   |      | mg/L  | 1  | 9/2/2016 1:44:12 PM  | 27180               |
| Barium                                     | 0.095  | 0.020   |      | mg/L  | 1  | 9/2/2016 1:44:12 PM  | 27180               |
| Cadmium                                    | ND     | 0.0020  |      | mg/L  | 1  | 9/2/2016 1:44:12 PM  | 27180               |
| Chromium                                   | ND     | 0.0060  |      | mg/L  | 1  | 9/2/2016 1:44:12 PM  | 27180               |
| Lead                                       | 0.0088 | 0.0050  |      | mg/L  | 1  | 9/7/2016 3:03:34 PM  | 27180               |
| Selenium                                   | ND     | 0.050   |      | mg/L  | 1  | 9/2/2016 1:44:12 PM  | 27180               |
| Silver                                     | ND     | 0.0050  |      | mg/L  | 1  | 9/2/2016 1:44:12 PM  | 27180               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 5 of 56                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-001F

**Client Sample ID:** MW-64  
**Collection Date:** 8/22/2016 11:30:00 AM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID            |
|-------------------------------------------|--------|---------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                      | Analyst: <b>pmf</b> |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/2/2016 12:36:26 PM | 27318               |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                      | Analyst: <b>MED</b> |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Barium                                    | 0.024  | 0.020   |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Calcium                                   | 500    | 5.0     |      | mg/L  | 5  | 9/7/2016 7:51:34 PM  | C37036              |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Iron                                      | 1.8    | 0.10    |      | mg/L  | 5  | 9/7/2016 7:51:34 PM  | C37036              |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Magnesium                                 | 78     | 1.0     |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Manganese                                 | 0.037  | 0.0020  |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Potassium                                 | 5.5    | 1.0     |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |
| Sodium                                    | 830    | 10      |      | mg/L  | 10 | 9/12/2016 1:24:04 PM | C37126              |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 1:22:31 PM | C37126              |
| Zinc                                      | 0.038  | 0.020   |      | mg/L  | 1  | 9/7/2016 7:49:50 PM  | C37036              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 6 of 56                                    |



# Analytical Report

Lab Order: 1608C81

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-001G

**Client Sample ID:** MW-64  
**Collection Date:** 8/22/2016 11:30:00 AM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID            |
|----------------------------------------|--------|-----|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |     |      |       |    |                      | Analyst: <b>DAM</b> |
| Acenaphthene                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Acenaphthylene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Aniline                                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Anthracene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Azobenzene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Benz(a)anthracene                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Benzo(a)pyrene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Benzo(b)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Benzo(g,h,i)perylene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Benzo(k)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Benzoic acid                           | ND     | 20  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Benzyl alcohol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Bis(2-chloroethoxy)methane             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Bis(2-chloroethyl)ether                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Bis(2-chloroisopropyl)ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Bis(2-ethylhexyl)phthalate             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 4-Bromophenyl phenyl ether             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Butyl benzyl phthalate                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Carbazole                              | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 4-Chloro-3-methylphenol                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 4-Chloroaniline                        | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2-Chloronaphthalene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2-Chlorophenol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 4-Chlorophenyl phenyl ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Chrysene                               | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Di-n-butyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Di-n-octyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Dibenz(a,h)anthracene                  | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Dibenzofuran                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 1,2-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 1,3-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 1,4-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 3,3'-Dichlorobenzidine                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Diethyl phthalate                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Dimethyl phthalate                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2,4-Dichlorophenol                     | ND     | 20  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2,4-Dimethylphenol                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 4,6-Dinitro-2-methylphenol             | ND     | 20  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2,4-Dinitrophenol                      | ND     | 20  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2,4-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2,6-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 7 of 56                                    |

**Analytical Report**

Lab Order: 1608C81

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-001G

**Client Sample ID:** MW-64  
**Collection Date:** 8/22/2016 11:30:00 AM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|----------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |          |      |       |    |                      | Analyst: <b>DAM</b> |
| Fluoranthene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Fluorene                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Hexachlorobenzene                      | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Hexachlorobutadiene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Hexachlorocyclopentadiene              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Hexachloroethane                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Indeno(1,2,3-cd)pyrene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Isophorone                             | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 1-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2-Methylphenol                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 3+4-Methylphenol                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| N-Nitrosodi-n-propylamine              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| N-Nitrosodimethylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| N-Nitrosodiphenylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Naphthalene                            | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 3-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 4-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Nitrobenzene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 4-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Pentachlorophenol                      | ND     | 20       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Phenanthrene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Phenol                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Pyrene                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Pyridine                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 1,2,4-Trichlorobenzene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2,4,5-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| 2,4,6-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Surr: 2-Fluorophenol                   | 53.3   | 15-123   |      | %Rec  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Surr: Phenol-d5                        | 36.9   | 4.13-124 |      | %Rec  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Surr: 2,4,6-Tribromophenol             | 80.6   | 18.4-134 |      | %Rec  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Surr: Nitrobenzene-d5                  | 64.6   | 28.8-134 |      | %Rec  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Surr: 2-Fluorobiphenyl                 | 59.0   | 35.9-125 |      | %Rec  | 1  | 8/29/2016 3:16:29 PM | 27151               |
| Surr: 4-Terphenyl-d14                  | 66.9   | 15-146   |      | %Rec  | 1  | 8/29/2016 3:16:29 PM | 27151               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 8 of 56                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-002A

**Client Sample ID:** MW-63  
**Collection Date:** 8/22/2016 10:40:00 AM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL    | Qual | Units        | DF | Date Analyzed         | Batch ID |
|-----------------------------------------|--------|--------|------|--------------|----|-----------------------|----------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |        |      | Analyst: DJF |    |                       |          |
| Gasoline Range Organics (GRO)           | ND     | 0.050  |      | mg/L         | 1  | 8/26/2016 4:18:44 PM  | G36811   |
| Surr: BFB                               | 95.6   | 70-130 |      | %Rec         | 1  | 8/26/2016 4:18:44 PM  | G36811   |
| <b>EPA METHOD 8260B: VOLATILES</b>      |        |        |      | Analyst: BCN |    |                       |          |
| Benzene                                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Toluene                                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Ethylbenzene                            | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Methyl tert-butyl ether (MTBE)          | 1.3    | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,2,4-Trimethylbenzene                  | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,3,5-Trimethylbenzene                  | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,2-Dichloroethane (EDC)                | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,2-Dibromoethane (EDB)                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Naphthalene                             | ND     | 2.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1-Methylnaphthalene                     | ND     | 4.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 2-Methylnaphthalene                     | ND     | 4.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Acetone                                 | ND     | 10     |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Bromobenzene                            | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Bromodichloromethane                    | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Bromoform                               | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Bromomethane                            | ND     | 3.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 2-Butanone                              | ND     | 10     |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Carbon disulfide                        | ND     | 10     |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Carbon Tetrachloride                    | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Chlorobenzene                           | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Chloroethane                            | ND     | 2.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Chloroform                              | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Chloromethane                           | ND     | 3.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 2-Chlorotoluene                         | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 4-Chlorotoluene                         | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| cis-1,2-DCE                             | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| cis-1,3-Dichloropropene                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,2-Dibromo-3-chloropropane             | ND     | 2.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Dibromochloromethane                    | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Dibromomethane                          | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,2-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,3-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,4-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| Dichlorodifluoromethane                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,1-Dichloroethane                      | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,1-Dichloroethene                      | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |
| 1,2-Dichloropropane                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 12:13:00 AM | B36743   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 9 of 56                                    |

**Analytical Report**

Lab Order: 1608C81

Date Reported: 9/26/2016

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-002A

**Client Sample ID:** MW-63  
**Collection Date:** 8/22/2016 10:40:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed         | Batch ID            |
|------------------------------------|--------|--------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                       | Analyst: <b>BCN</b> |
| 1,3-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 2,2-Dichloropropane                | ND     | 2.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 1,1-Dichloropropene                | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Hexachlorobutadiene                | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Surr: 1,2-Dichloroethane-d4        | 102    | 70-130 |      | %Rec  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Surr: 4-Bromofluorobenzene         | 99.5   | 70-130 |      | %Rec  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Surr: Dibromofluoromethane         | 95.2   | 70-130 |      | %Rec  | 1  | 8/25/2016 12:13:00 AM | B36743              |
| Surr: Toluene-d8                   | 98.8   | 70-130 |      | %Rec  | 1  | 8/25/2016 12:13:00 AM | B36743              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 10 of 56                                   |

**Analytical Report**Lab Order: **1608C81**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-63**Project:** RCRA Wells 8-22-2016**Collection Date:** 8/22/2016 10:40:00 AM**Lab ID:** 1608C81-002C**Matrix:** Aqueous

| <b>Analyses</b>                       | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|---------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |               |            |             |              |           |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND            | 0.20       |             | mg/L         | 1         | 8/24/2016 2:30:14 PM | 27141               |
| Motor Oil Range Organics (MRO)        | ND            | 2.5        |             | mg/L         | 1         | 8/24/2016 2:30:14 PM | 27141               |
| Surr: DNOP                            | 128           | 67.9-149   |             | %Rec         | 1         | 8/24/2016 2:30:14 PM | 27141               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C81****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/26/2016****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-63**Project:** RCRA Wells 8-22-2016**Collection Date:** 8/22/2016 10:40:00 AM**Lab ID:** 1608C81-002D**Matrix:** Aqueous

| <b>Analyses</b>                   | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b>  | <b>Batch ID</b>     |
|-----------------------------------|---------------|------------|-------------|--------------|-----------|-----------------------|---------------------|
| <b>CARBON DIOXIDE</b>             |               |            |             |              |           |                       | Analyst: <b>JRR</b> |
| Total Carbon Dioxide              | 470           | 1.0        | H           | mg CO2/L     | 1         | 8/24/2016 11:09:48 PM | R36738              |
| <b>EPA METHOD 300.0: ANIONS</b>   |               |            |             |              |           |                       | Analyst: <b>MRA</b> |
| Fluoride                          | 0.16          | 0.10       |             | mg/L         | 1         | 8/24/2016 5:32:20 AM  | A36713              |
| Chloride                          | 100           | 10         |             | mg/L         | 20        | 8/24/2016 5:44:45 AM  | A36713              |
| Nitrogen, Nitrite (As N)          | ND            | 0.10       |             | mg/L         | 1         | 8/24/2016 5:32:20 AM  | A36713              |
| Bromide                           | 1.5           | 0.10       |             | mg/L         | 1         | 8/29/2016 12:33:37 PM | R36847              |
| Nitrogen, Nitrate (As N)          | 39            | 2.0        | *           | mg/L         | 20        | 8/24/2016 10:15:25 AM | R36722              |
| Phosphorus, Orthophosphate (As P) | ND            | 0.50       |             | mg/L         | 1         | 8/24/2016 5:32:20 AM  | A36713              |
| Sulfate                           | 1200          | 25         | *           | mg/L         | 50        | 8/24/2016 3:25:37 PM  | R36722              |
| <b>SM2320B: ALKALINITY</b>        |               |            |             |              |           |                       | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO3)            | 500.7         | 20.00      |             | mg/L CaCO3   | 1         | 8/24/2016 11:09:48 PM | R36738              |
| Carbonate (As CaCO3)              | ND            | 2.000      |             | mg/L CaCO3   | 1         | 8/24/2016 11:09:48 PM | R36738              |
| Total Alkalinity (as CaCO3)       | 500.7         | 20.00      |             | mg/L CaCO3   | 1         | 8/24/2016 11:09:48 PM | R36738              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C81**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-63**Project:** RCRA Wells 8-22-2016**Collection Date:** 8/22/2016 10:40:00 AM**Lab ID:** 1608C81-002E**Matrix:** Aqueous

| <b>Analyses</b>                            | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|--------------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |               |            |             |              |           |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND            | 0.00020    |             | mg/L         | 1         | 9/2/2016 12:38:29 PM | 27318               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |               |            |             |              |           |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND            | 0.020      |             | mg/L         | 1         | 9/2/2016 1:47:34 PM  | 27180               |
| Barium                                     | 0.28          | 0.020      |             | mg/L         | 1         | 9/2/2016 1:47:34 PM  | 27180               |
| Cadmium                                    | ND            | 0.0020     |             | mg/L         | 1         | 9/2/2016 1:47:34 PM  | 27180               |
| Chromium                                   | 0.016         | 0.0060     |             | mg/L         | 1         | 9/2/2016 1:47:34 PM  | 27180               |
| Lead                                       | ND            | 0.0050     |             | mg/L         | 1         | 9/7/2016 3:16:33 PM  | 27180               |
| Selenium                                   | ND            | 0.050      |             | mg/L         | 1         | 9/2/2016 1:47:34 PM  | 27180               |
| Silver                                     | ND            | 0.0050     |             | mg/L         | 1         | 9/2/2016 1:47:34 PM  | 27180               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-002F

**Client Sample ID:** MW-63  
**Collection Date:** 8/22/2016 10:40:00 AM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                      | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/2/2016 12:40:33 PM | 27318        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                      | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Barium                                    | 0.023  | 0.020   |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Calcium                                   | 320    | 5.0     |      | mg/L  | 5  | 9/7/2016 7:55:00 PM  | C37036       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Iron                                      | 3.9    | 0.10    |      | mg/L  | 5  | 9/7/2016 7:55:00 PM  | C37036       |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Magnesium                                 | 99     | 1.0     |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Manganese                                 | 0.73   | 0.0020  |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Potassium                                 | 4.1    | 1.0     |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |
| Sodium                                    | 420    | 5.0     |      | mg/L  | 5  | 9/7/2016 7:55:00 PM  | C37036       |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 1:25:43 PM | C37126       |
| Zinc                                      | 0.10   | 0.020   |      | mg/L  | 1  | 9/7/2016 7:53:23 PM  | C37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



# Analytical Report

Lab Order: 1608C81

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-002G

**Client Sample ID:** MW-63  
**Collection Date:** 8/22/2016 10:40:00 AM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID            |
|----------------------------------------|--------|-----|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |     |      |       |    |                      | Analyst: <b>DAM</b> |
| Acenaphthene                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Acenaphthylene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Aniline                                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Anthracene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Azobenzene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Benz(a)anthracene                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Benzo(a)pyrene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Benzo(b)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Benzo(g,h,i)perylene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Benzo(k)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Benzoic acid                           | ND     | 20  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Benzyl alcohol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Bis(2-chloroethoxy)methane             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Bis(2-chloroethyl)ether                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Bis(2-chloroisopropyl)ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Bis(2-ethylhexyl)phthalate             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 4-Bromophenyl phenyl ether             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Butyl benzyl phthalate                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Carbazole                              | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 4-Chloro-3-methylphenol                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 4-Chloroaniline                        | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2-Chloronaphthalene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2-Chlorophenol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 4-Chlorophenyl phenyl ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Chrysene                               | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Di-n-butyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Di-n-octyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Dibenz(a,h)anthracene                  | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Dibenzofuran                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 1,2-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 1,3-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 1,4-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 3,3'-Dichlorobenzidine                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Diethyl phthalate                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Dimethyl phthalate                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2,4-Dichlorophenol                     | ND     | 20  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2,4-Dimethylphenol                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 4,6-Dinitro-2-methylphenol             | ND     | 20  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2,4-Dinitrophenol                      | ND     | 20  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2,4-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2,6-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-002G

**Client Sample ID:** MW-63  
**Collection Date:** 8/22/2016 10:40:00 AM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|----------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |          |      |       |    |                      | Analyst: <b>DAM</b> |
| Fluoranthene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Fluorene                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Hexachlorobenzene                      | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Hexachlorobutadiene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Hexachlorocyclopentadiene              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Hexachloroethane                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Indeno(1,2,3-cd)pyrene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Isophorone                             | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 1-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2-Methylphenol                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 3+4-Methylphenol                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| N-Nitrosodi-n-propylamine              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| N-Nitrosodimethylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| N-Nitrosodiphenylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Naphthalene                            | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 3-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 4-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Nitrobenzene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 4-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Pentachlorophenol                      | ND     | 20       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Phenanthrene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Phenol                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Pyrene                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Pyridine                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 1,2,4-Trichlorobenzene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2,4,5-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| 2,4,6-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Surr: 2-Fluorophenol                   | 14.5   | 15-123   | S    | %Rec  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Surr: Phenol-d5                        | 11.9   | 4.13-124 |      | %Rec  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Surr: 2,4,6-Tribromophenol             | 52.7   | 18.4-134 |      | %Rec  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Surr: Nitrobenzene-d5                  | 31.8   | 28.8-134 |      | %Rec  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Surr: 2-Fluorobiphenyl                 | 32.6   | 35.9-125 | S    | %Rec  | 1  | 8/29/2016 3:44:30 PM | 27151               |
| Surr: 4-Terphenyl-d14                  | 38.3   | 15-146   |      | %Rec  | 1  | 8/29/2016 3:44:30 PM | 27151               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 16 of 56                                   |

**Analytical Report**

Lab Order: 1608C81

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-003A

**Client Sample ID:** MW-65  
**Collection Date:** 8/22/2016 9:30:00 AM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL    | Qual | Units        | DF  | Date Analyzed         | Batch ID |
|-----------------------------------------|--------|--------|------|--------------|-----|-----------------------|----------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |        |      | Analyst: DJF |     |                       |          |
| Gasoline Range Organics (GRO)           | 20     | 2.5    |      | mg/L         | 50  | 8/26/2016 4:47:16 PM  | G36811   |
| Surr: BFB                               | 102    | 70-130 |      | %Rec         | 50  | 8/26/2016 4:47:16 PM  | G36811   |
| <b>EPA METHOD 8260B: VOLATILES</b>      |        |        |      | Analyst: BCN |     |                       |          |
| Benzene                                 | 5700   | 200    |      | µg/L         | 200 | 8/25/2016 12:36:00 AM | B36743   |
| Toluene                                 | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Ethylbenzene                            | 1200   | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Methyl tert-butyl ether (MTBE)          | 490    | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,2,4-Trimethylbenzene                  | 480    | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,3,5-Trimethylbenzene                  | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,2-Dichloroethane (EDC)                | 88     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,2-Dibromoethane (EDB)                 | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Naphthalene                             | 46     | 40     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1-Methylnaphthalene                     | 130    | 80     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 2-Methylnaphthalene                     | ND     | 80     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Acetone                                 | ND     | 200    |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Bromobenzene                            | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Bromodichloromethane                    | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Bromoform                               | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Bromomethane                            | ND     | 60     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 2-Butanone                              | ND     | 200    |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Carbon disulfide                        | ND     | 200    |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Carbon Tetrachloride                    | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Chlorobenzene                           | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Chloroethane                            | ND     | 40     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Chloroform                              | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Chloromethane                           | ND     | 60     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 2-Chlorotoluene                         | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 4-Chlorotoluene                         | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| cis-1,2-DCE                             | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| cis-1,3-Dichloropropene                 | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,2-Dibromo-3-chloropropane             | ND     | 40     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Dibromochloromethane                    | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Dibromomethane                          | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,2-Dichlorobenzene                     | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,3-Dichlorobenzene                     | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,4-Dichlorobenzene                     | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| Dichlorodifluoromethane                 | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,1-Dichloroethane                      | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,1-Dichloroethene                      | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |
| 1,2-Dichloropropane                     | ND     | 20     |      | µg/L         | 20  | 8/25/2016 1:00:00 AM  | B36743   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C81

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-003A

**Client Sample ID:** MW-65  
**Collection Date:** 8/22/2016 9:30:00 AM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|--------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: BCN |
| 1,3-Dichloropropane                | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 2,2-Dichloropropane                | ND     | 40     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 1,1-Dichloropropene                | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Hexachlorobutadiene                | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 2-Hexanone                         | ND     | 200    |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Isopropylbenzene                   | 72     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 4-Isopropyltoluene                 | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 4-Methyl-2-pentanone               | ND     | 200    |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Methylene Chloride                 | ND     | 60     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| n-Butylbenzene                     | ND     | 60     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| n-Propylbenzene                    | 220    | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| sec-Butylbenzene                   | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Styrene                            | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| tert-Butylbenzene                  | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 1,1,1,2-Tetrachloroethane          | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 1,1,2,2-Tetrachloroethane          | ND     | 40     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Tetrachloroethene (PCE)            | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| trans-1,2-DCE                      | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| trans-1,3-Dichloropropene          | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 1,2,3-Trichlorobenzene             | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 1,2,4-Trichlorobenzene             | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 1,1,1-Trichloroethane              | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 1,1,2-Trichloroethane              | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Trichloroethene (TCE)              | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Trichlorofluoromethane             | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| 1,2,3-Trichloropropane             | ND     | 40     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Vinyl chloride                     | ND     | 20     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Xylenes, Total                     | 65     | 30     |      | µg/L  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Surr: 1,2-Dichloroethane-d4        | 100    | 70-130 |      | %Rec  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Surr: 4-Bromofluorobenzene         | 101    | 70-130 |      | %Rec  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Surr: Dibromofluoromethane         | 94.9   | 70-130 |      | %Rec  | 20 | 8/25/2016 1:00:00 AM | B36743       |
| Surr: Toluene-d8                   | 99.9   | 70-130 |      | %Rec  | 20 | 8/25/2016 1:00:00 AM | B36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 18 of 56                                   |

**Analytical Report**Lab Order: **1608C81**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-003C

**Client Sample ID:** MW-65  
**Collection Date:** 8/22/2016 9:30:00 AM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | 4.8    | 0.20     |      | mg/L  | 1  | 8/24/2016 2:52:03 PM | 27141               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/24/2016 2:52:03 PM | 27141               |
| Surr: DNOP                            | 115    | 67.9-149 |      | %Rec  | 1  | 8/24/2016 2:52:03 PM | 27141               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-003D

**Client Sample ID:** MW-65  
**Collection Date:** 8/22/2016 9:30:00 AM  
**Matrix:** Aqueous

| Analyses                          | Result | PQL   | Qual | Units      | DF  | Date Analyzed         | Batch ID     |
|-----------------------------------|--------|-------|------|------------|-----|-----------------------|--------------|
| <b>CARBON DIOXIDE</b>             |        |       |      |            |     |                       | Analyst: JRR |
| Total Carbon Dioxide              | 860    | 2.5   | H    | mg CO2/L   | 2.5 | 8/30/2016 1:08:20 AM  | R36846       |
| <b>EPA METHOD 300.0: ANIONS</b>   |        |       |      |            |     |                       | Analyst: MRA |
| Fluoride                          | ND     | 0.50  |      | mg/L       | 5   | 8/24/2016 5:57:09 AM  | A36713       |
| Chloride                          | 220    | 10    |      | mg/L       | 20  | 8/24/2016 6:09:34 AM  | A36713       |
| Nitrogen, Nitrite (As N)          | ND     | 0.50  |      | mg/L       | 5   | 8/24/2016 5:57:09 AM  | A36713       |
| Bromide                           | 4.2    | 0.50  |      | mg/L       | 5   | 8/29/2016 12:46:02 PM | R36847       |
| Nitrogen, Nitrate (As N)          | ND     | 0.50  |      | mg/L       | 5   | 8/24/2016 5:57:09 AM  | A36713       |
| Phosphorus, Orthophosphate (As P) | ND     | 2.5   |      | mg/L       | 5   | 8/24/2016 5:57:09 AM  | A36713       |
| Sulfate                           | 1600   | 25    | *    | mg/L       | 50  | 8/24/2016 3:38:01 PM  | R36722       |
| <b>SM2320B: ALKALINITY</b>        |        |       |      |            |     |                       | Analyst: JRR |
| Bicarbonate (As CaCO3)            | 945.6  | 50.00 |      | mg/L CaCO3 | 2.5 | 8/30/2016 1:08:20 AM  | R36846       |
| Carbonate (As CaCO3)              | ND     | 5.000 |      | mg/L CaCO3 | 2.5 | 8/30/2016 1:08:20 AM  | R36846       |
| Total Alkalinity (as CaCO3)       | 945.6  | 50.00 |      | mg/L CaCO3 | 2.5 | 8/30/2016 1:08:20 AM  | R36846       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-003E

**Client Sample ID:** MW-65  
**Collection Date:** 8/22/2016 9:30:00 AM  
**Matrix:** Aqueous

| Analyses                                   | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID            |
|--------------------------------------------|--------|---------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |         |      |       |    |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND     | 0.00020 |      | mg/L  | 1  | 9/2/2016 12:42:36 PM | 27318               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |         |      |       |    |                      | Analyst: <b>MED</b> |
| Arsenic                                    | 0.020  | 0.020   |      | mg/L  | 1  | 9/2/2016 1:50:52 PM  | 27180               |
| Barium                                     | 0.11   | 0.020   |      | mg/L  | 1  | 9/2/2016 1:50:52 PM  | 27180               |
| Cadmium                                    | ND     | 0.0020  |      | mg/L  | 1  | 9/2/2016 1:50:52 PM  | 27180               |
| Chromium                                   | ND     | 0.0060  |      | mg/L  | 1  | 9/2/2016 1:50:52 PM  | 27180               |
| Lead                                       | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 3:18:17 PM  | 27180               |
| Selenium                                   | ND     | 0.050   |      | mg/L  | 1  | 9/2/2016 1:50:52 PM  | 27180               |
| Silver                                     | ND     | 0.0050  |      | mg/L  | 1  | 9/2/2016 1:50:52 PM  | 27180               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-003F

**Client Sample ID:** MW-65  
**Collection Date:** 8/22/2016 9:30:00 AM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID            |
|-------------------------------------------|--------|---------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                      | Analyst: <b>pmf</b> |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/2/2016 12:44:40 PM | 27318               |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                      | Analyst: <b>MED</b> |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 7:56:56 PM  | C37036              |
| Barium                                    | 0.045  | 0.020   |      | mg/L  | 1  | 9/7/2016 7:56:56 PM  | C37036              |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 7:56:56 PM  | C37036              |
| Calcium                                   | 370    | 5.0     |      | mg/L  | 5  | 9/7/2016 8:05:38 PM  | C37036              |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 7:56:56 PM  | C37036              |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 7:56:56 PM  | C37036              |
| Iron                                      | 6.7    | 0.20    |      | mg/L  | 10 | 9/12/2016 1:36:56 PM | C37126              |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 7:56:56 PM  | C37036              |
| Magnesium                                 | 110    | 5.0     |      | mg/L  | 5  | 9/7/2016 8:05:38 PM  | C37036              |
| Manganese                                 | 2.7    | 0.010   |      | mg/L  | 5  | 9/7/2016 8:05:38 PM  | C37036              |
| Potassium                                 | 4.1    | 1.0     |      | mg/L  | 1  | 9/7/2016 7:56:56 PM  | C37036              |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/7/2016 7:56:56 PM  | C37036              |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 7:56:56 PM  | C37036              |
| Sodium                                    | 800    | 10      |      | mg/L  | 10 | 9/12/2016 1:36:56 PM | C37126              |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 1:30:26 PM | C37126              |
| Zinc                                      | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 7:56:56 PM  | C37036              |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



# Analytical Report

Lab Order: 1608C81

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-003G

**Client Sample ID:** MW-65  
**Collection Date:** 8/22/2016 9:30:00 AM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|----------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |     |      |       |    |                      | Analyst: DAM |
| Acenaphthene                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Acenaphthylene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Aniline                                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Anthracene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Azobenzene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Benz(a)anthracene                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Benzo(a)pyrene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Benzo(b)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Benzo(g,h,i)perylene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Benzo(k)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Benzoic acid                           | ND     | 20  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Benzyl alcohol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Bis(2-chloroethoxy)methane             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Bis(2-chloroethyl)ether                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Bis(2-chloroisopropyl)ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Bis(2-ethylhexyl)phthalate             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 4-Bromophenyl phenyl ether             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Butyl benzyl phthalate                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Carbazole                              | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 4-Chloro-3-methylphenol                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 4-Chloroaniline                        | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 2-Chloronaphthalene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 2-Chlorophenol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 4-Chlorophenyl phenyl ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Chrysene                               | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Di-n-butyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Di-n-octyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Dibenz(a,h)anthracene                  | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Dibenzofuran                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 1,2-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 1,3-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 1,4-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 3,3'-Dichlorobenzidine                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Diethyl phthalate                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| Dimethyl phthalate                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 2,4-Dichlorophenol                     | ND     | 20  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 2,4-Dimethylphenol                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 4,6-Dinitro-2-methylphenol             | ND     | 20  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 2,4-Dinitrophenol                      | ND     | 20  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 2,4-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |
| 2,6-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C81

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.

**Client Sample ID:** MW-65

**Project:** RCRA Wells 8-22-2016

**Collection Date:** 8/22/2016 9:30:00 AM

**Lab ID:** 1608C81-003G

**Matrix:** Aqueous

| Analyses                               | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|----------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |          |      |       |    |                      | Analyst: <b>DAM</b> |
| Fluoranthene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Fluorene                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Hexachlorobenzene                      | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Hexachlorobutadiene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Hexachlorocyclopentadiene              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Hexachloroethane                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Indeno(1,2,3-cd)pyrene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Isophorone                             | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 1-Methylnaphthalene                    | 14     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 2-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 2-Methylphenol                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 3+4-Methylphenol                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| N-Nitrosodi-n-propylamine              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| N-Nitrosodimethylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| N-Nitrosodiphenylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Naphthalene                            | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 2-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 3-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 4-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Nitrobenzene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 2-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 4-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Pentachlorophenol                      | ND     | 20       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Phenanthrene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Phenol                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Pyrene                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Pyridine                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 1,2,4-Trichlorobenzene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 2,4,5-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| 2,4,6-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Surr: 2-Fluorophenol                   | 26.0   | 15-123   |      | %Rec  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Surr: Phenol-d5                        | 22.6   | 4.13-124 |      | %Rec  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Surr: 2,4,6-Tribromophenol             | 57.0   | 18.4-134 |      | %Rec  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Surr: Nitrobenzene-d5                  | 55.2   | 28.8-134 |      | %Rec  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Surr: 2-Fluorobiphenyl                 | 45.0   | 35.9-125 |      | %Rec  | 1  | 8/29/2016 4:12:17 PM | 27151               |
| Surr: 4-Terphenyl-d14                  | 44.8   | 15-146   |      | %Rec  | 1  | 8/29/2016 4:12:17 PM | 27151               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C81

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-004A

**Client Sample ID:** MW-59  
**Collection Date:** 8/22/2016 12:15:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL    | Qual | Units        | DF | Date Analyzed         | Batch ID |
|-----------------------------------------|--------|--------|------|--------------|----|-----------------------|----------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |        |      | Analyst: DJF |    |                       |          |
| Gasoline Range Organics (GRO)           | 1.8    | 0.050  |      | mg/L         | 1  | 8/26/2016 5:15:42 PM  | G36811   |
| Surr: BFB                               | 111    | 70-130 |      | %Rec         | 1  | 8/26/2016 5:15:42 PM  | G36811   |
| <b>EPA METHOD 8260B: VOLATILES</b>      |        |        |      | Analyst: BCN |    |                       |          |
| Benzene                                 | 7.7    | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Toluene                                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Ethylbenzene                            | 65     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Methyl tert-butyl ether (MTBE)          | 1200   | 50     |      | µg/L         | 50 | 8/25/2016 10:30:00 AM | R36736   |
| 1,2,4-Trimethylbenzene                  | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1,3,5-Trimethylbenzene                  | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1,2-Dichloroethane (EDC)                | 25     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1,2-Dibromoethane (EDB)                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Naphthalene                             | 2.8    | 2.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1-Methylnaphthalene                     | ND     | 4.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 2-Methylnaphthalene                     | ND     | 4.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Acetone                                 | ND     | 10     |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Bromobenzene                            | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Bromodichloromethane                    | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Bromoform                               | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Bromomethane                            | ND     | 3.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 2-Butanone                              | ND     | 10     |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Carbon disulfide                        | ND     | 10     |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Carbon Tetrachloride                    | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Chlorobenzene                           | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Chloroethane                            | ND     | 2.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Chloroform                              | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Chloromethane                           | ND     | 3.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 2-Chlorotoluene                         | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 4-Chlorotoluene                         | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| cis-1,2-DCE                             | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| cis-1,3-Dichloropropene                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1,2-Dibromo-3-chloropropane             | ND     | 2.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Dibromochloromethane                    | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Dibromomethane                          | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1,2-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1,3-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1,4-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| Dichlorodifluoromethane                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1,1-Dichloroethane                      | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1,1-Dichloroethene                      | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |
| 1,2-Dichloropropane                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:23:00 AM  | B36743   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 25 of 56                                   |

# Analytical Report

Lab Order: 1608C81

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-004A

**Client Sample ID:** MW-59  
**Collection Date:** 8/22/2016 12:15:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|--------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: BCN |
| 1,3-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 2,2-Dichloropropane                | ND     | 2.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 1,1-Dichloropropene                | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Hexachlorobutadiene                | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Isopropylbenzene                   | 12     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 4-Isopropyltoluene                 | 1.5    | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| n-Propylbenzene                    | 12     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| sec-Butylbenzene                   | 5.4    | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Surr: 1,2-Dichloroethane-d4        | 101    | 70-130 |      | %Rec  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Surr: 4-Bromofluorobenzene         | 101    | 70-130 |      | %Rec  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Surr: Dibromofluoromethane         | 94.9   | 70-130 |      | %Rec  | 1  | 8/25/2016 1:23:00 AM | B36743       |
| Surr: Toluene-d8                   | 96.6   | 70-130 |      | %Rec  | 1  | 8/25/2016 1:23:00 AM | B36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 26 of 56                                   |

**Analytical Report**Lab Order: **1608C81**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-004C

**Client Sample ID:** MW-59  
**Collection Date:** 8/22/2016 12:15:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | 0.85   | 0.20     |      | mg/L  | 1  | 8/24/2016 3:13:42 PM | 27141               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/24/2016 3:13:42 PM | 27141               |
| Surr: DNOP                            | 113    | 67.9-149 |      | %Rec  | 1  | 8/24/2016 3:13:42 PM | 27141               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-004D

**Client Sample ID:** MW-59  
**Collection Date:** 8/22/2016 12:15:00 PM  
**Matrix:** Aqueous

| Analyses                          | Result | PQL   | Qual | Units      | DF | Date Analyzed         | Batch ID     |
|-----------------------------------|--------|-------|------|------------|----|-----------------------|--------------|
| <b>CARBON DIOXIDE</b>             |        |       |      |            |    |                       | Analyst: JRR |
| Total Carbon Dioxide              | 1000   | 1.0   | H    | mg CO2/L   | 1  | 8/25/2016 12:10:12 AM | R36738       |
| <b>EPA METHOD 300.0: ANIONS</b>   |        |       |      |            |    |                       | Analyst: MRA |
| Fluoride                          | ND     | 0.10  |      | mg/L       | 1  | 8/24/2016 6:21:59 AM  | A36713       |
| Chloride                          | 190    | 10    |      | mg/L       | 20 | 8/24/2016 6:34:24 AM  | A36713       |
| Nitrogen, Nitrite (As N)          | ND     | 0.10  |      | mg/L       | 1  | 8/24/2016 6:21:59 AM  | A36713       |
| Bromide                           | ND     | 0.10  |      | mg/L       | 1  | 8/24/2016 10:52:38 AM | R36722       |
| Nitrogen, Nitrate (As N)          | 0.60   | 0.10  |      | mg/L       | 1  | 8/24/2016 10:52:38 AM | R36722       |
| Phosphorus, Orthophosphate (As P) | ND     | 0.50  |      | mg/L       | 1  | 8/24/2016 6:21:59 AM  | A36713       |
| Sulfate                           | 200    | 10    |      | mg/L       | 20 | 8/24/2016 6:34:24 AM  | A36713       |
| <b>SM2320B: ALKALINITY</b>        |        |       |      |            |    |                       | Analyst: JRR |
| Bicarbonate (As CaCO3)            | 1094   | 20.00 |      | mg/L CaCO3 | 1  | 8/25/2016 12:10:12 AM | R36738       |
| Carbonate (As CaCO3)              | ND     | 2.000 |      | mg/L CaCO3 | 1  | 8/25/2016 12:10:12 AM | R36738       |
| Total Alkalinity (as CaCO3)       | 1094   | 20.00 |      | mg/L CaCO3 | 1  | 8/25/2016 12:10:12 AM | R36738       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C81**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-59**Project:** RCRA Wells 8-22-2016**Collection Date:** 8/22/2016 12:15:00 PM**Lab ID:** 1608C81-004E**Matrix:** Aqueous

| <b>Analyses</b>                            | <b>Result</b> | <b>PQL</b> | <b>Qual</b> | <b>Units</b> | <b>DF</b> | <b>Date Analyzed</b> | <b>Batch ID</b>     |
|--------------------------------------------|---------------|------------|-------------|--------------|-----------|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |               |            |             |              |           |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND            | 0.00020    |             | mg/L         | 1         | 9/2/2016 12:46:45 PM | 27318               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |               |            |             |              |           |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND            | 0.020      |             | mg/L         | 1         | 9/2/2016 1:54:11 PM  | 27180               |
| Barium                                     | 0.17          | 0.020      |             | mg/L         | 1         | 9/2/2016 1:54:11 PM  | 27180               |
| Cadmium                                    | ND            | 0.0020     |             | mg/L         | 1         | 9/2/2016 1:54:11 PM  | 27180               |
| Chromium                                   | 0.0062        | 0.0060     |             | mg/L         | 1         | 9/2/2016 1:54:11 PM  | 27180               |
| Lead                                       | ND            | 0.0050     |             | mg/L         | 1         | 9/7/2016 3:19:54 PM  | 27180               |
| Selenium                                   | ND            | 0.050      |             | mg/L         | 1         | 9/2/2016 1:54:11 PM  | 27180               |
| Silver                                     | ND            | 0.0050     |             | mg/L         | 1         | 9/2/2016 1:54:11 PM  | 27180               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-004F

**Client Sample ID:** MW-59  
**Collection Date:** 8/22/2016 12:15:00 PM  
**Matrix:** Aqueous

| Analyses                                  | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID     |
|-------------------------------------------|--------|---------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 7470: MERCURY</b>           |        |         |      |       |    |                      | Analyst: pmf |
| Mercury                                   | ND     | 0.00020 |      | mg/L  | 1  | 9/2/2016 12:48:51 PM | 27318        |
| <b>EPA METHOD 6010B: DISSOLVED METALS</b> |        |         |      |       |    |                      | Analyst: MED |
| Arsenic                                   | ND     | 0.020   |      | mg/L  | 1  | 9/7/2016 8:07:13 PM  | C37036       |
| Barium                                    | 0.076  | 0.020   |      | mg/L  | 1  | 9/7/2016 8:07:13 PM  | C37036       |
| Cadmium                                   | ND     | 0.0020  |      | mg/L  | 1  | 9/7/2016 8:07:13 PM  | C37036       |
| Calcium                                   | 200    | 5.0     |      | mg/L  | 5  | 9/7/2016 8:08:50 PM  | C37036       |
| Chromium                                  | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 8:07:13 PM  | C37036       |
| Copper                                    | ND     | 0.0060  |      | mg/L  | 1  | 9/7/2016 8:07:13 PM  | C37036       |
| Iron                                      | 5.2    | 0.20    |      | mg/L  | 10 | 9/12/2016 1:40:04 PM | C37126       |
| Lead                                      | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 8:07:13 PM  | C37036       |
| Magnesium                                 | 56     | 1.0     |      | mg/L  | 1  | 9/7/2016 8:07:13 PM  | C37036       |
| Manganese                                 | 1.9    | 0.010   |      | mg/L  | 5  | 9/7/2016 8:08:50 PM  | C37036       |
| Potassium                                 | 3.7    | 1.0     |      | mg/L  | 1  | 9/7/2016 8:07:13 PM  | C37036       |
| Selenium                                  | ND     | 0.050   |      | mg/L  | 1  | 9/12/2016 1:38:36 PM | C37126       |
| Silver                                    | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 8:07:13 PM  | C37036       |
| Sodium                                    | 480    | 5.0     |      | mg/L  | 5  | 9/7/2016 8:08:50 PM  | C37036       |
| Uranium                                   | ND     | 0.10    |      | mg/L  | 1  | 9/12/2016 1:38:36 PM | C37126       |
| Zinc                                      | 0.021  | 0.020   |      | mg/L  | 1  | 9/7/2016 8:07:13 PM  | C37036       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |



# Analytical Report

Lab Order: 1608C81

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-004G

**Client Sample ID:** MW-59  
**Collection Date:** 8/22/2016 12:15:00 PM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL | Qual | Units | DF | Date Analyzed        | Batch ID     |
|----------------------------------------|--------|-----|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |     |      |       |    |                      | Analyst: DAM |
| Acenaphthene                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Acenaphthylene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Aniline                                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Anthracene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Azobenzene                             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Benz(a)anthracene                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Benzo(a)pyrene                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Benzo(b)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Benzo(g,h,i)perylene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Benzo(k)fluoranthene                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Benzoic acid                           | ND     | 20  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Benzyl alcohol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Bis(2-chloroethoxy)methane             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Bis(2-chloroethyl)ether                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Bis(2-chloroisopropyl)ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Bis(2-ethylhexyl)phthalate             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 4-Bromophenyl phenyl ether             | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Butyl benzyl phthalate                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Carbazole                              | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 4-Chloro-3-methylphenol                | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 4-Chloroaniline                        | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 2-Chloronaphthalene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 2-Chlorophenol                         | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 4-Chlorophenyl phenyl ether            | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Chrysene                               | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Di-n-butyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Di-n-octyl phthalate                   | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Dibenz(a,h)anthracene                  | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Dibenzofuran                           | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 1,2-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 1,3-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 1,4-Dichlorobenzene                    | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 3,3'-Dichlorobenzidine                 | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Diethyl phthalate                      | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| Dimethyl phthalate                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 2,4-Dichlorophenol                     | ND     | 20  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 2,4-Dimethylphenol                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 4,6-Dinitro-2-methylphenol             | ND     | 20  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 2,4-Dinitrophenol                      | ND     | 20  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 2,4-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |
| 2,6-Dinitrotoluene                     | ND     | 10  |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151        |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Analytical Report

Lab Order: 1608C81

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-004G

**Client Sample ID:** MW-59  
**Collection Date:** 8/22/2016 12:15:00 PM  
**Matrix:** Aqueous

| Analyses                               | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|----------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8270C: SEMIVOLATILES</b> |        |          |      |       |    |                      | Analyst: <b>DAM</b> |
| Fluoranthene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Fluorene                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Hexachlorobenzene                      | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Hexachlorobutadiene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Hexachlorocyclopentadiene              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Hexachloroethane                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Indeno(1,2,3-cd)pyrene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Isophorone                             | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 1-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 2-Methylnaphthalene                    | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 2-Methylphenol                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 3+4-Methylphenol                       | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| N-Nitrosodi-n-propylamine              | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| N-Nitrosodimethylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| N-Nitrosodiphenylamine                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Naphthalene                            | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 2-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 3-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 4-Nitroaniline                         | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Nitrobenzene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 2-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 4-Nitrophenol                          | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Pentachlorophenol                      | ND     | 20       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Phenanthrene                           | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Phenol                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Pyrene                                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Pyridine                               | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 1,2,4-Trichlorobenzene                 | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 2,4,5-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| 2,4,6-Trichlorophenol                  | ND     | 10       |      | µg/L  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Surr: 2-Fluorophenol                   | 26.0   | 15-123   |      | %Rec  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Surr: Phenol-d5                        | 23.0   | 4.13-124 |      | %Rec  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Surr: 2,4,6-Tribromophenol             | 45.8   | 18.4-134 |      | %Rec  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Surr: Nitrobenzene-d5                  | 67.6   | 28.8-134 |      | %Rec  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Surr: 2-Fluorobiphenyl                 | 62.7   | 35.9-125 |      | %Rec  | 1  | 8/29/2016 4:39:59 PM | 27151               |
| Surr: 4-Terphenyl-d14                  | 47.6   | 15-146   |      | %Rec  | 1  | 8/29/2016 4:39:59 PM | 27151               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 32 of 56                                   |

**Analytical Report**

Lab Order: 1608C81

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-005A

**Client Sample ID:** MW-62  
**Collection Date:** 8/22/2016 1:50:00 PM  
**Matrix:** Aqueous

| Analyses                                | Result | PQL    | Qual | Units        | DF | Date Analyzed        | Batch ID |
|-----------------------------------------|--------|--------|------|--------------|----|----------------------|----------|
| <b>EPA METHOD 8015D: GASOLINE RANGE</b> |        |        |      | Analyst: DJF |    |                      |          |
| Gasoline Range Organics (GRO)           | ND     | 0.050  |      | mg/L         | 1  | 8/26/2016 5:44:09 PM | G36811   |
| Surr: BFB                               | 98.0   | 70-130 |      | %Rec         | 1  | 8/26/2016 5:44:09 PM | G36811   |
| <b>EPA METHOD 8260B: VOLATILES</b>      |        |        |      | Analyst: BCN |    |                      |          |
| Benzene                                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Toluene                                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Ethylbenzene                            | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Methyl tert-butyl ether (MTBE)          | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,2,4-Trimethylbenzene                  | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,3,5-Trimethylbenzene                  | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,2-Dichloroethane (EDC)                | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,2-Dibromoethane (EDB)                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Naphthalene                             | ND     | 2.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1-Methylnaphthalene                     | ND     | 4.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 2-Methylnaphthalene                     | ND     | 4.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Acetone                                 | ND     | 10     |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Bromobenzene                            | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Bromodichloromethane                    | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Bromoform                               | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Bromomethane                            | ND     | 3.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 2-Butanone                              | ND     | 10     |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Carbon disulfide                        | ND     | 10     |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Carbon Tetrachloride                    | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Chlorobenzene                           | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Chloroethane                            | ND     | 2.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Chloroform                              | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Chloromethane                           | ND     | 3.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 2-Chlorotoluene                         | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 4-Chlorotoluene                         | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| cis-1,2-DCE                             | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| cis-1,3-Dichloropropene                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,2-Dibromo-3-chloropropane             | ND     | 2.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Dibromochloromethane                    | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Dibromomethane                          | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,2-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,3-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,4-Dichlorobenzene                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| Dichlorodifluoromethane                 | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,1-Dichloroethane                      | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,1-Dichloroethene                      | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |
| 1,2-Dichloropropane                     | ND     | 1.0    |      | µg/L         | 1  | 8/25/2016 1:47:00 AM | B36743   |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**

Lab Order: 1608C81

**Hall Environmental Analysis Laboratory, Inc.**

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-005A

**Client Sample ID:** MW-62  
**Collection Date:** 8/22/2016 1:50:00 PM  
**Matrix:** Aqueous

| Analyses                           | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch ID     |
|------------------------------------|--------|--------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                      | Analyst: BCN |
| 1,3-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 2,2-Dichloropropane                | ND     | 2.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 1,1-Dichloropropene                | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Hexachlorobutadiene                | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Surr: 1,2-Dichloroethane-d4        | 101    | 70-130 |      | %Rec  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Surr: 4-Bromofluorobenzene         | 98.3   | 70-130 |      | %Rec  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Surr: Dibromofluoromethane         | 97.4   | 70-130 |      | %Rec  | 1  | 8/25/2016 1:47:00 AM | B36743       |
| Surr: Toluene-d8                   | 100    | 70-130 |      | %Rec  | 1  | 8/25/2016 1:47:00 AM | B36743       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    | Page 34 of 56                                   |

**Analytical Report**Lab Order: **1608C81**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-005C

**Client Sample ID:** MW-62  
**Collection Date:** 8/22/2016 1:50:00 PM  
**Matrix:** Aqueous

| Analyses                              | Result | PQL      | Qual | Units | DF | Date Analyzed        | Batch ID            |
|---------------------------------------|--------|----------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 8015D: DIESEL RANGE</b> |        |          |      |       |    |                      | Analyst: <b>TOM</b> |
| Diesel Range Organics (DRO)           | ND     | 0.20     |      | mg/L  | 1  | 8/24/2016 3:35:26 PM | 27141               |
| Motor Oil Range Organics (MRO)        | ND     | 2.5      |      | mg/L  | 1  | 8/24/2016 3:35:26 PM | 27141               |
| Surr: DNOP                            | 115    | 67.9-149 |      | %Rec  | 1  | 8/24/2016 3:35:26 PM | 27141               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1608C81

Date Reported: 9/26/2016

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-005D

**Client Sample ID:** MW-62  
**Collection Date:** 8/22/2016 1:50:00 PM  
**Matrix:** Aqueous

| Analyses                                        | Result | PQL   | Qual | Units                  | DF  | Date Analyzed         | Batch ID     |
|-------------------------------------------------|--------|-------|------|------------------------|-----|-----------------------|--------------|
| <b>CARBON DIOXIDE</b>                           |        |       |      |                        |     |                       | Analyst: JRR |
| Total Carbon Dioxide                            | 500    | 1.0   | H    | mg CO2/L               | 1   | 8/25/2016 12:46:39 AM | R36738       |
| <b>EPA METHOD 300.0: ANIONS</b>                 |        |       |      |                        |     |                       | Analyst: MRA |
| Fluoride                                        | ND     | 2.0   |      | mg/L                   | 20  | 8/24/2016 6:59:12 AM  | A36713       |
| Chloride                                        | 14     | 0.50  |      | mg/L                   | 1   | 8/24/2016 6:46:48 AM  | A36713       |
| Bromide                                         | ND     | 0.10  |      | mg/L                   | 1   | 8/29/2016 12:58:26 PM | R36847       |
| Phosphorus, Orthophosphate (As P <sub>i</sub> ) | ND     | 10    |      | mg/L                   | 20  | 8/24/2016 6:59:12 AM  | A36713       |
| Sulfate                                         | 4000   | 50    | *    | mg/L                   | 100 | 8/24/2016 4:15:15 PM  | R36722       |
| Nitrate+Nitrite as N                            | ND     | 1.0   |      | mg/L                   | 5   | 8/29/2016 1:10:51 PM  | R36847       |
| <b>SM2320B: ALKALINITY</b>                      |        |       |      |                        |     |                       | Analyst: JRR |
| Bicarbonate (As CaCO <sub>3</sub> )             | 549.6  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1   | 8/25/2016 12:46:39 AM | R36738       |
| Carbonate (As CaCO <sub>3</sub> )               | ND     | 2.000 |      | mg/L CaCO <sub>3</sub> | 1   | 8/25/2016 12:46:39 AM | R36738       |
| Total Alkalinity (as CaCO <sub>3</sub> )        | 549.6  | 20.00 |      | mg/L CaCO <sub>3</sub> | 1   | 8/25/2016 12:46:39 AM | R36738       |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |

**Analytical Report**Lab Order: **1608C81**Date Reported: **9/26/2016****Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** RCRA Wells 8-22-2016  
**Lab ID:** 1608C81-005E

**Client Sample ID:** MW-62  
**Collection Date:** 8/22/2016 1:50:00 PM  
**Matrix:** Aqueous

| Analyses                                   | Result | PQL     | Qual | Units | DF | Date Analyzed        | Batch ID            |
|--------------------------------------------|--------|---------|------|-------|----|----------------------|---------------------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |         |      |       |    |                      | Analyst: <b>pmf</b> |
| Mercury                                    | ND     | 0.00020 |      | mg/L  | 1  | 9/2/2016 12:50:57 PM | 27318               |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |         |      |       |    |                      | Analyst: <b>MED</b> |
| Arsenic                                    | ND     | 0.020   |      | mg/L  | 1  | 9/2/2016 1:57:32 PM  | 27180               |
| Barium                                     | 0.33   | 0.020   |      | mg/L  | 1  | 9/2/2016 1:57:32 PM  | 27180               |
| Cadmium                                    | ND     | 0.0020  |      | mg/L  | 1  | 9/2/2016 1:57:32 PM  | 27180               |
| Chromium                                   | 0.0071 | 0.0060  |      | mg/L  | 1  | 9/2/2016 1:57:32 PM  | 27180               |
| Lead                                       | ND     | 0.0050  |      | mg/L  | 1  | 9/7/2016 3:21:32 PM  | 27180               |
| Selenium                                   | ND     | 0.050   |      | mg/L  | 1  | 9/2/2016 1:57:32 PM  | 27180               |
| Silver                                     | ND     | 0.0050  |      | mg/L  | 1  | 9/2/2016 1:57:32 PM  | 27180               |

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

|                    |    |                                                    |    |                                                 |
|--------------------|----|----------------------------------------------------|----|-------------------------------------------------|
| <b>Qualifiers:</b> | *  | Value exceeds Maximum Contaminant Level.           | B  | Analyte detected in the associated Method Blank |
|                    | D  | Sample Diluted Due to Matrix                       | E  | Value above quantitation range                  |
|                    | H  | Holding times for preparation or analysis exceeded | J  | Analyte detected below quantitation limits      |
|                    | ND | Not Detected at the Reporting Limit                | P  | Sample pH Not In Range                          |
|                    | R  | RPD outside accepted recovery limits               | RL | Reporting Detection Limit                       |
|                    |    |                                                    |    |                                                 |