# **GW - 001 2018 AGWMR**

# 2018 Groundwater Remediation and Monitoring Annual Report

January – December 2018



# Bloomfield Terminal Western Refining Southwest, Inc. #50 Rd 4990 Bloomfield, New Mexico 87413

Submitted: February 2019

Prepared for New Mexico Oil Conservation Division and New Mexico Environment Department – Hazardous Waste Bureau

# **Table of Contents**

List of Acronymsi					
EXECUT	VE SUN	MMARY	iii		
SECTION	l 1.0		1		
INTRODU	JCTION		1		
1.1	Site Location and Description				
1.2	History	of Facility Modifications and Improvements	2		
	1.2.1	Previous Owner's Activities	2		
	1.2.2	Bloomfield Refining Activities	2		
SECTION	l 2.0		9		
SCOPE C	OF ACTI	VITIES	9		
2.1	Ground	dwater and Surface Water Monitoring Activities	9		
	2.1.1	Fluid Measurements	9		
	2.1.2	Groundwater Field Parameters	9		
	2.1.3	Terminal Complex Sampling	10		
	2.1.4	North Boundary Barrier Sampling	11		
	2.1.5	San Juan River Bluff Sampling	13		
	2.1.6	San Juan River Terrace Sampling	14		
	2.1.7	Outfall and Seep Inspections	15		
2.2	Total F	Iuids Recovery Systems	15		
	2.2.1	Groundwater Recovery System	15		
	2.2.2	North Boundary Barrier Wall Collection System	15		
	2.2.3	Hammond Ditch Recovery System	15		
	2.2.4	River Terrace Remediation System	16		
	2.2.5	East Outfall Recovery System	16		
2.3	Waste	Disposal			
SECTION	3.0				
RESULTS	S SUMN	1ARY			
3.1	Ground	dwater and Surface Water Monitoring			
	3.1.1	Fluid Level Measurements			
	3.1.2	Groundwater Field Measurements			
	3.1.3	I erminal Complex Sampling			
	3.1.4	North Boundary Barrier Sampling			
	3.1.5	San Juan River Bluff Sampling			
	3.1.0	San Juan River Terrace Sampling			
2.2	3.1.7 Conoro	Outrall and Seep Inspections			
3.2	Separa	ale-Phase Hydrocarbons			
3.3		Croundwater Recovery Systems	20 26		
	3.3.1 2.2.2	North Boundary Barrier Wall Collection System	20		
	3.3.Z 2.2.2	Hommond Ditch Pocovory System	20		
	331	Fast Outfall Recovery System	20 27		
3 /	Wasta	Disposal	27 27		
	I 4.0 QI∩NIQ		20 20		
	Groups	dwatar Manitaring	<b>۲۵</b>		
4.1 10	Outfall	and Seen Inspections	20 20		
4.∠ ∕\ 2	Total Fluide Recovery Systems				
DEEEDE	1 J.U		ວດ		
NEFERE	1053		J		

# **List of Tables**

- Table 1 Fluid Level Measurements Summary
- Table 2 Groundwater Field Parameter Summary
- Table 3
   Terminal Wells Analytical Summary
- Table 4
   Cross-Gradient Wells Analytical Summary
- Table 5
   Downgradient Wells Analytical Summary
- Table 6RCRA Wells Analytical Summary
- Table 7
   Collection and Observation Wells Analytical Summary
- Table 8Outfalls Analytical Summary
- Table 9Seeps Analytical Summary
- Table 10San Juan River Analytical Summary
- Table 11 Wastewater Volumes

# **List of Figures**

- Figure 1 Site Location Map
- Figure 2 Well Location Map
- Figure 3 San Juan River Area Location Map
- Figure 4 Groundwater Elevation and Flow Direction April 2018
- Figure 5 Groundwater Elevation and Flow Direction August 2018
- Figure 6 Product Thickness Map April 2018
- Figure 7 Product Thickness Map August 2018
- Figure 8 BTEX and MTBE Concentration Map April 2018
- Figure 9 BTEX and MTBE Concentration Map August 2018
- Figure 10 Chloride, Sulfate, Nitrate, & TDS Concentration Map April 2018
- Figure 11 Naphthalene Concentration Map August 2018
- Figure 12 Chloride Concentration Map August 2018
- Figure 13 Sulfate Concentration Map August 2018
- Figure 14 Nitrate Concentration Map August 2018
- Figure 15 TDS Concentration Map August 2018
- Figure 16 Wells Sampled April 2018
- Figure 17 Wells Sampled August 2018

# **List of Appendices**

Appendix A Analytical Reports and QA/QC Review/Validation

# List of Acronyms

benzene, toluene, ethylbenzene, and xylene (BTEX) below grade level (bgl) diesel range organics (DRO) dissolved oxygen (D.O.) Environmental Protection Agency (EPA) feet (ft) gallons per minute (gpm) gasoline range organics (GRO) New Mexico Environment Department Hazardous Waste Bureau (NMED-HWB) New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (EMNRD-OCD) investigation derived waste (IDW) liters (L) maximum contaminant level (MCL) methyl tert-butyl ether (MTBE) micrograms per liter (ug/L) micro Siemens per centimeter (uS/cm) milligrams per liter (mg/L) millivolts (mV) monitoring well (MW) New Mexico Administrative Code (NMAC) Oxidation reduction potential (ORP) parts per million (ppm) photoionization detector (PID) polyvinyl chloride (PVC) pounds per square inch (psi) Resource Conservation and Recovery Act (RCRA) Semi-volatile organic compounds (SVOCs) separate phase hydrocarbon (SPH) Standard cubic feet per minute (scfm) Temporary piezometer (TP) top of casing (TOC) total dissolved solids (TDS)

total petroleum hydrocarbon (TPH) toxicity characteristic leaching procedure (TCLP) volatile organic compounds (VOC) Wastewater Treatment System (WWTS) Water Quality Control Commission (WQCC)

# EXECUTIVE SUMMARY

This Annual Report includes a summary of activities conducted at the Bloomfield Terminal in 2018 pursuant to the reporting requirements outlined in Section IV.A.2. of the July 2007 Consent Order (NMED, 2007) issued by the New Mexico Environment Department Hazardous Waste Bureau (NMED-HWB), and Section 2.F. of Discharge Permit GW-001 (NMOCD, 2017) issued by the New Mexico Energy, Mineral, and Natural Resources Department Oil Conservation Division (EMNRD-OCD). This report includes a summary of sampling activities, total fluids recovery, and remediation monitoring activities conducted in 2018.

#### **Groundwater Measurements**

Depth-to-groundwater and depth-to-product measurements were taken from the facility monitoring wells, recovery wells, observation wells, and collection wells prior to the collection of groundwater samples during the Semi-Annual and Annual Sampling Events conducted in April 2018 and August 2018, respectively. The field measurements were taken a minimum of 48 hours after the recovery well pumps were turned off to allow the groundwater elevation to stabilize. Groundwater elevation contours show that groundwater generally flows in a northwest direction, with groundwater under the former process areas flowing towards the north boundary barrier wall and Hammond Ditch collection system.

# Groundwater and Surface Water Monitoring

Groundwater and surface water monitoring activities conducted in 2018 included the collection of groundwater samples and field data from the following four areas of the facility.

- Terminal Complex includes Terminal, Cross-Gradient, Downgradient, and RCRA Wells
- North Boundary Barrier includes observation and collection wells
- San Juan River Bluff includes Outfall and Seep locations
- San Juan River Terrace includes San Juan River samples

Sampling associated with the Bioventing System located at the River Terrace is summarized in the *River Terrace Voluntary Corrective Measures Bioventing System Annual Report*, which is submitted in March of each year. Groundwater and surface water monitoring activities conducted in April and August 2018 follow the guidelines outlined in the approved Facility-Wide Groundwater Monitoring Plan dated June 2014 and Discharge Permit GW-001.

Groundwater concentrations above respective screening levels are primarily localized near the former refinery process units and tank farm. The north boundary barrier wall and active groundwater recovery systems within the facility provide hydraulic capture of the impacted groundwater, and thus eliminate the concern of impacts to the San Juan River.

#### **Outfall and Seep Inspections**

Bi-monthly visual inspections of Seeps 1, 2, 3, and 5 and along the San Juan River Bluff, which includes the East Fork area, were conducted in 2018. Visual inspection results and samples collected along the San Juan River as part of the groundwater monitoring program for the Bloomfield Terminal indicate that there has been no impact to the San Juan River.

#### **Total Fluids Recovery Systems**

The Bloomfield Terminal operates and monitors several fluid recovery systems within the facility, which include:

- Groundwater Recovery System using recovery wells within the Terminal Complex;
- North Boundary Barrier Collection System;
- Hammond Ditch Recovery System;
- River Terrace Remediation system; and
- East Outfall Recovery System.

All fluids recovered from these systems, with the exception of the River Terrace Remediation System, are pumped to the on-site Waste Water Treatment Plant for treatment prior to disposal through the on-site injection well or evaporation ponds. Groundwater recovered at the River Terrace Remediation System is treated through two granular activated carbon units and discharged to the raw water ponds.

# SECTION 1.0 INTRODUCTION

#### **1.1** Site Location and Description

Owner:	San Juan Refining Company, a Nev 1250 Washington Street Tempe, Arizona 85281	w Mexico Corporation	
Operator:	Western Refining Southwest, Inc. (Formerly Giant Industries Arizona, Inc.), an Arizona Corporation 1250 Washington Street Tempe, Arizona 85281		
Facility:	Bloomfield Terminal # 50 Road 4990 Bloomfield, New Mexico 87413	(physical address)	
	Western Refining Southwest, Inc. P.O. Box 159 Bloomfield, New Mexico 87413	(postal address)	
US EPA ID:	NMD089416416		
SIC Code:	5171		

The former Bloomfield Refinery facility is currently owned by San Juan Refining Company, a New Mexico corporation, and operated by Western Refining Southwest, Inc. formerly known as Giant Industries Arizona, Inc., an Arizona corporation. The facility had an approximate refining capacity of 18,000 barrels per day. Various process units operated at the facility, which included crude distillation, reforming, fluidized catalytic cracking, sulfur recovery, merox treater, catalytic polymerization, and diesel hydrotreating. Products produced at the refinery included gasoline, diesel fuels, jet fuels, kerosene, propane, butane, naphtha, residual fuel, fuel oils, and LPG.

The Bloomfield Terminal is located on approximately 263 acres south of Bloomfield, New Mexico in San Juan County (Figure 1). The Bloomfield complex is bisected by County Road 4990 (Sullivan Road), which runs east-west. The terminal offices, former process units, tank farm, wastewater treatment system (WWTS), raw water ponds, and fire training area are located north of the county road. On November 23, 2009, Western Refining indefinitely suspended refining operations at the Bloomfield Facility. The crude oil unloading areas, product loading racks, former LPG storage tanks, maintenance buildings/90-day storage area, pipeline offices, and transportation truck shop. A Class I injection well is located northeast of the tank farm (Figure 2).

The Bloomfield facility is located on a bluff 120 feet above the south side of the San Juan River. The top of the bluff is relatively flat and is at an elevation of 5,540 feet above sea level. Based on the available site-specific and regional subsurface information, the site is underlain by the Quaternary Jackson Lake terrace deposits, which unconformably overlie the tertiary Nacimiento Formation. The Jackson Lake deposits consist of fine grained sand, silt, and clay that grades to course sand, gravel and cobble size material closer to the contact with the Nacimiento Formation. The Jackson Lake Formation is over 40 feet thick near the southeast portion of the site and generally thins to the northwest toward the San Juan River. The Nacimiento Formation is primarily composed of fine grained materials (e.g., carbonaceous mudstone/claystone with interbedded sandstones) with a reported local thickness of approximately 570 feet (Groundwater Technology, 1994).

# **1.2 History of Facility Modifications and Improvements**

# 1.2.1 Previous Owner's Activities

Local entrepreneur, Kimball Campbell, constructed the crude topping unit that eventually became the Bloomfield Refinery facility in the late 1950s. O.L. Garretson bought the facility in the early 1960s, renamed it Plateau, Inc. and sold it in 1964 to Suburban Propane of New Jersey.

Operationally, the facility had steadily evolved through a series of improvements, modifications and expansions. Suburban upgraded the facility in 1966, increasing the Crude Unit throughput to 4,100 barrels per calendar day (bpcd) and adding 1,850 bpcd Reformer and Naphtha Hydrotreater. In 1975, the Crude Unit was expanded to 8,400 bpcd.

In 1979, the Crude Unit was expanded again to 16,800 bpcd (later demonstrated to have a hydraulic capacity in excess of 18,000 bpcd). A Fluidized Catalytic Cracker (FCC) with a nominal capacity of 6,000 bpcd, an Unsaturated Gas Plant and a Treater Unit were also added at that time. The capacity of the Reformer / Hydrotreater was increased to 2,250 bpcd. The FCC was upgraded in 1982 to conform to State and Federal air quality standards.

# 1.2.2 Bloomfield Refining Activities

Bloomfield Refining Company (BRC) acquired the facility from Suburban Propane (Plateau) on October 31, 1984. The current owner of the facility is San Juan Refining Company. Western Refining Southwest, Inc. is the facility operator.

Over the years, there have been many improvements made to facility operations and equipment. These improvements are summarized below.

# <u>1986</u>

• Relocated the spent caustic tank onto a concrete pad with retaining walls.

#### <u>1987</u>

- Upgraded the Reformer and increased its capacity to 3,600 barrels per day (bpd). Modified the Laboratory and Treater Unit and increased tank storage capacity.
- Cleaned up the North and South bone yards.
- Decommissioned and dismantled old Tanks 6 and 7.
- Relocated the API recovered oil Tank 8 and Tank 9 to concrete pads with concrete retaining walls.
- Established a systematic inspection, maintenance, and repair program for tanks.

#### <u>1988</u>

- Added a 2,000 bpd Catalytic Polymerization Unit. Removed the facility's two underground storage tanks and replaced them with aboveground storage tanks.
- Completed installation of a Cathodic Protection System for the Tank Farm and underground piping.
- Rebuilt the process area sewer system and added curbed, concrete paving to the unpaved process areas.

#### <u>1989</u>

- Increased Reformer throughput to 4,000 bpd.
- Activated the groundwater hydrocarbon recovery system.
- Constructed the first double-lined Evaporation Pond as part of Refinery's Discharge Plan improvements.

#### <u>1990</u>

- Constructed the second double-lined Evaporation Pond as part of the Refinery's Discharge Plan improvements.
- Constructed a drum storage shed and converted to bulk chemical usage, where possible, in order to minimize the use of drummed chemicals.

#### <u>1991</u>

- Revamped the burner fuel sales rack with concrete paving and curbing.
- Submitted the permit application for a Class 1 Disposal Well.
- Upgraded the groundwater hydrocarbon recovery system.

#### <u>1992</u>

• Submitted an air quality permit application. The application included a proposal to install a Diesel Hydrodesulphurization (HDS) Unit and a Sulfur Recovery Unit (SRU) in order to comply with new EPA low-sulfur diesel regulations and decrease air emissions.

#### <u>1993</u>

• Began a program under a Consent Agreement with the United Stated Environment Protection Agency (USEPA) to conduct Interim Measures (IM), a RCRA Facility

Investigation (RFI) and a Corrective Measures Study (CMS) addressing groundwater contamination.

- Replaced portions of the underground cooling water piping.
- Added concrete paving around the API Separator.
- Installed the HDS Unit and SRU.

#### <u>1994</u>

- Completed installation of the Class 1 Injection Well.
- Retrofitted the Aeration Lagoons with two additional liners.
- Installed a floating cover for the API Separator.
- Closed the clay-lined evaporation ponds and spray evaporation area.

#### <u>1995</u>

- Improved the diking south of the Refinery to further reduce storm water runoff.
- Began implementation of additional corrective measures for groundwater cleanup as determined from the CMS.

#### <u>1998</u>

• Converted the former evaporation ponds on the east side of the Refinery to raw water storage ponds.

#### <u>1999</u>

• Installed sheet pilings and a bentonite slurry wall adjacent to the San Juan River, North of the process units, in order to intercept a small hydrocarbon seep that had been detected in the area.

#### <u>2001</u>

• Initiated a program to inoculate the Aeration Lagoons with sludge-consuming microorganisms.

# <u>2002</u>

• A concrete liner was installed on the Hammond Ditch. At that time, Giant constructed the Hammond Ditch French Drain Recovery System to address contamination under the ditch.

#### <u>2003</u>

• Several monitoring wells were converted into recovery wells to further enhance the continuing ground water remediation efforts. MW-45, MW-46 & MW-47 were installed to facilitate sample collection. East Outfall #1 Recovery System was set up to return impacted water back to the refinery.

#### <u>2004</u>

• Monitoring wells MW-48, MW-49 and eight temporary piezometers were installed as part of Voluntary River Terrace Investigation activities.

- Several temporary piezometers were drilled on the north side of Hammond Ditch to chart the surface elevation of the Nacimiento Formation. Design of a slurry wall to be constructed on the north side of Hammond Ditch was completed.
- Lined containments were constructed in the draws north of Hammond Ditch in order to collect potentially contaminated groundwater which discharged to the land surface.
- Sewer lines were replaced in the Treater and FCC.

#### <u>2005</u>

- The North Boundary Barrier Wall installation was completed March 2005. Fourteen observation wells were installed on the north side of the slurry wall and fifteen collection wells were installed on the south side of the slurry wall in April 2005.
- As a matter of preventive maintenance, the lined containments in the draws north of the slurry wall were upgraded periodically.
- In April, five more temporary piezometers were installed at the River Terrace. In August, Dewatering Wells (DW-1 and DW-2) and thirteen bioventing wells were drilled and construction of the River Terrace Bioventing Project was initiated.

#### <u>2006</u>

- The River Terrace Bioventing System was put on-line in January 2006. Monitoring data from that project is submitted in a separate report to the regulatory agencies.
- During the week of February 13, 2006 seven sump wells were installed along the bluff north of the barrier wall. These wells were drilled in accordance with the North Barrier Wall Work Plan which was submitted to OCD February 7, 2006.
- Fluids extraction from the observation and collection wells, the north draws, and the sump wells continued throughout 2006.
- As a matter of preventive maintenance, the lined containments in the draws north of the slurry wall were upgraded periodically.

#### <u>2007</u>

- On May 31, 2007, Giant Industries, Inc. became a wholly-owned subsidiary of Western Refining, Inc. of El Paso, Texas.
- Construction of the Ammonia Refrigeration Unit (ARU) was completed and the system put on line by March 2007. This unit is used to recover propane from hydrogen streams.
- Construction of the Benzene Stripper was completed and the system put in service by October 2007. This unit is used to strip benzene from process waste water.
- Discharge piping was installed at RW #1 to increase the recovery capacity of the well.
- As a matter of preventive maintenance, the lined containments in the draws north of the slurry wall (Seeps 1-9) were upgraded periodically.

#### <u>2008</u>

• The Facility-Wide Groundwater Monitoring Plan (Revised May 2008) was approved and implemented in the latter half of 2008.

- In September, Group No. 2 RCRA Site Investigation activities commenced. Areas included in Group No. 2 are SWMU 2, SWMU 8, SWMU 9, SWMU 11, and SWMU 18.
- As part of the *Closure Plan North and South Aeration Lagoons* the ponds were drained, cleaned out, inspected, repaired, and put back in service. This process started in October 2008 and was completed in February 2009.

#### <u>2009</u>

- In March, monitoring wells were installed around the Aeration Lagoons to satisfy Group No. 1 RCRA site investigation requirements. Group No. 3 Site Investigation activities began in April. This group includes SWMU 4, SWMU 5, AOC 22, AOC 23, AOC 24, AOC 25, and AOC 26.
- On November 23, 2009, Western Refining indefinitely suspended refining operations at the Bloomfield Refinery. The crude unloading and product loading racks, storage tanks and other supporting equipment remain in operation. Guidelines from the *Facility-Wide Groundwater Monitoring Plan December 2007(Revised May 2008)* will continue to be followed.

#### <u>2010</u>

- In January 2010, due to analytical results indicating high benzene levels, piping was installed to permanently route discharge water from Tank 33 to the API Separator.
- Guidelines from the *Facility-Wide Groundwater Monitoring Plan December* 2007(*Revised May 2008*) were followed through the first six months of 2010.
- In August, Group No. 4 and Group No. 5 investigation field activities were conducted which included the installation of three monitoring wells.
- After receipt of the New Mexico Environmental Department (NMED) letter Approval with Direction Facility-Wide Groundwater Monitoring dated July 26, 2010, Western personnel followed guidelines from the Facility-Wide Groundwater Monitoring Plan (FWGMP) dated June 2010.

#### <u>2011</u>

• In August 2012, Group No. 6 RCRA Investigation activities were conducted, which involved soil sampling within each of the Seep Areas located along the northwest portion of the facility.

#### <u>2012</u>

- In January 2012 the group 8 RCRA Investigation activities commenced, which involved soil sampling within SMWU No. 3 – Underground Piping Currently in Use, and SWMU No. 6 – Abandoned Underground Piping.
- On October 12, 2012, NMED Hazardous Waste Bureau approved a Work Plan submitted by Western dated October 9, 2012 authorizing Western to optimize the remediation efforts at the River Terrace area. Optimization activities conducted in 2012 included the removal of approximately 250 cubic yards of impacted clay-type soil from the river terrace area, and conversion of a portion of the biovent system to an air

sparging system in efforts to target the most impacted groundwater area located within the southwest corner of the River Terrace Area.

In the third quarter 2012, Western commenced work that involves enhancement of the total fluids recovery system. This work involves transitioning five monitoring wells (MW-20, MW-55, MW-56, MW-57, and MW-58) and one recovery well (RW-3) to operational total fluids recovery wells. RW-3 was returned to operation by the fourth quarter 2012. Operation of the monitoring wells located near the aeration lagoons is expected to begin in April 2013.

#### <u>2013</u>

- In the first quarter 2013, Western completed work that involves enhancement of the total fluids recovery system. This work involved transitioning five monitoring wells to active total fluids recovery wells (MW-20, MW-55, MW-56, MW-57, and MW-58). Operation of the monitoring wells located near the aeration lagoons has commenced.
- In June 2013, Western removed two former diesel dispenser pumps, storage tank, associated piping, former fueling pad and approximately 500 cubic yards of soil. Soil samples confirmed all the impacted soil was removed from the immediate vicinity of the former diesel fueling pumps.
- In 2013 Western replaced Tank 37, Tank 38 and Tank 34 with new equivalent tanks. Tank 37 and Tank 34 containments were also lined.
- Well MW-70 was developed on May 22, 2013 and baseline samples were collected on June 13, 2013.

#### <u>2014</u>

- In 2014 Western Refining preformed an environmental site investigation for the SWMUs designated as Group 9 and SWMU No. 27 Wastewater Collection System. Group 9 includes SWMU No. 12 (API Separator), SWMU No. 13 (Process Area) and SWMU No. 14 (Tanks 3, 4, and 5)
- In August 2014, NMED was notified of a significant rain event that resulted in severe flash flooding in the Bloomfield, New Mexico area. The storm caused the Hammond ditch to reverse flow directions, resulting in the entire roadway along the north boundary barrier to fill with water. The significant run-off along the river bluff resulted in Seep 4, Seep 6, Seep 7, Seep 8 and Seep 9 to permanently erode away due to the heavy surface run-off. Prior to the flooding event, these locations were no longer actively collecting seep water due to the existence of the north boundary barrier, and had previously been investigated as part of the 2007 Consent Order. Therefore as of August 2014, the only existing catchment locations are Seep 1, Seep 2, Seep 3, and Seep 5.

#### <u>2015</u>

• In 2015 routine groundwater and surface water sampling was conducted per the approved Facility-Wide Groundwater Monitoring Plans.

#### 2016

• Routine groundwater and surface waste sampling was conducted in 2016.

#### <u>2017</u>

• The terminal operated as usual in 2017 without any deviations from normal operations.

- There were no reportable leaks, spills, or releases in 2017. There was no indication of expanding groundwater contamination and routine corrective action was implemented to address the known plume.
- Fluids were observed in the leachate collection system in the North and South Evaporation ponds, as was also previously observed in prior years since the ponds were constructed. A summary of the fluids was previously provided in correspondence to the OCD dated June 23, 2017.
- Information on the volume of water placed in the evaporation ponds and ultimately disposed in the injection well is provided in the Annual Report for the injection well. The new injection well was put into service in 2017, the details of which are provided in the Annual Report for the injection well.
- Routine groundwater and surface water sampling was conducted in 2017.
- Discharge Permit GW-001 was renewed on June 8, 2017.

#### <u>2018</u>

- The terminal operated as usual in 2018 without any deviations from normal operations.
- On May 17, 2018 a release of slop oil was discovered at a culvert that crosses beneath County Road 4990. The material described as slop oil consists of petroleum products that originate at the truck loading rack and crude oil that originates at the crude oil unloading rack. The pipeline was evacuated of hydrocarbons and free liquids were removed. Impacted soils were removed and the excavation was backfilled due to potential traffic hazards along the immediately adjacent county road. In October 2018 an Investigation Work Plan was submitted to OCD and NMED.
- Routine groundwater and surface water sampling was conducted in April and August 2018.

# SECTION 2.0 SCOPE OF ACTIVITIES

This Annual Report includes a summary of activities conducted at the Bloomfield facility in 2018 pursuant to the reporting requirements outlined in Section IV.A.2. of the July 2007 Consent Order issued by the NMED-HWB, and Section 2.F. of Discharge Permit GW-001 issued to the Bloomfield Terminal by the EMNDR-OCD. This report includes a summary of sampling activities, total fluids recovery, and remediation monitoring activities conducted in 2018.

# 2.1 Groundwater and Surface Water Monitoring Activities

Groundwater and surface water monitoring activities conducted in 2018 include the collection of groundwater and surface water samples and field data from the following four areas of the facility:

- Terminal Complex;
- North Boundary Barrier;
- San Juan River Bluff; and
- San Juan River Terrace

Monitoring activities conducted in April and August 2018 followed the guidelines outlined in the approved Facility-Wide Groundwater Monitoring Plan dated June 2014. Detailed information regarding groundwater and surface water analyses conducted in 2018 is included in Section 3.1.

#### 2.1.1 Fluid Measurements

Depth-to-groundwater and depth-to-product measurements were collected from the facility monitoring wells, recovery wells, observation wells, and collection wells prior to the collection of groundwater samples during the Semi-Annual and Annual Sampling Events conducted in April 2018 and August 2018, respectively. All fluid level measurements were collected using a Geotech Interface Probe that measures to an accuracy of 0.01 feet. The field measurements were collected a minimum of 48 hours after the recovery well pumps were turned off to allow the groundwater elevation to stabilize. A summary of the fluid measurements collected is provided in Section 3.1.1.

#### 2.1.2 Groundwater Field Parameters

Prior to collecting groundwater samples, each well was purged a minimum of three well volumes. Groundwater field parameters (temperature, pH, and conductivity) were collected every two gallons or after purging one well volume, whichever was less. The total volume purged at each well was determined once the pH, temperature, and conductivity field parameters stabilized to within 10 percent for three measurements. A summary of the field

measurements collected is provided in Section 3.1.2. In addition, field parameters were collected at the outfalls and seeps when sufficient water was present.

# 2.1.3 Terminal Complex Sampling

Groundwater samples were collected from specified wells located within the Terminal Complex during the Semi-Annual Sampling Event and Annual Sampling Event conducted in April 2018 and August 2018, respectively, with the exception of wells that contained evidence of SPH, wells that were dry, or wells that did not contain enough water to collect a sample. Figure 16 and Figure 17 show the location of the wells sampled during each sampling event. A summary of the analytical results is provided in Section 3.1.3.

#### Semi-Annual Sampling Event

Groundwater samples were collected from the following wells during the Semi-Annual Sampling Event conducted in April 2018:

- Terminal Wells: MW-52;
- Cross-Gradient Wells: MW-1 and MW-13;
- Downgradient Wells: MW-12, MW-35, MW-37, and MW-38.

Groundwater samples collected during the Semi-Annual Sampling Event were submitted to Hall Environmental Analytical Laboratory and analyzed for the following:

- Volatile organic compounds (VOCs) Target List benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tert-butyl ether (MTBE) by EPA Method 8260B; and
- Total petroleum hydrocarbons (TPH) Gasoline Range Organics (GRO), Diesel Range Organics (DRO), and Motor Oil Range Organics (MRO) by EPA Modified Method 8015B (Terminal Well MW-52 and Downgradient Well MW-35 are not scheduled for TPH analysis).

Terminal Wells MW-20 and MW-30 were not sampled due to the presence of measurable SPH during the gauging event. Cross-Gradient Well MW-33 was not sampled due to the insufficient volume of groundwater. Background Well MW-6 was dry and was not sampled.

No RCRA Investigation Wells are scheduled for sampling during the Semi-Annual Sampling Event conducted in April.

#### Annual Sampling Event

Groundwater samples were collected from the following wells during the Annual Sampling Event conducted in August 2018:

- Terminal Wells: MW-29, MW-31, MW-44, and MW-52;
- Cross-Gradient Wells: MW-1, MW-13, MW-27, and MW-32;
- Downgradient Wells: MW-11, MW-12, MW-34, MW-35, MW-37, and MW-38; and
- RCRA Investigation Wells: MW-51, MW-53, MW-59, MW-62, MW-63, MW-64, MW-65, MW-67, MW-68, and MW-70.

Groundwater samples collected during the Annual Sampling Event were submitted to Hall Environmental Analytical Laboratory and analyzed for the following:

- VOCs by EPA Method 8260B;
- TPH-DRO by EPA Method 8015B;
- TPH-GRO by EPA Method 8015B;
- TPH-MRO by EPA Method 8015B;
- Total RCRA 8 Metals by EPA Method 6010B/7470;
- Dissolved Metals by EPA Method 6010B/7470;
- Alkalinity by EPA Method 310.1;
- Anions by EPA Method 300.0; and
- Carbon Dioxide by EPA Method 310.1.

Groundwater samples were not collected from Terminal Wells RW-9, MW-20, RW-23, RW-28, and RW-43 due to the presence of SPH during the facility-wide gauging event. Groundwater samples were not collected from Terminal Wells RW-1, MW-4, RW-15, RW-18, MW-21, MW-30, MW-40, and RW-42 due to the presence of a hydrocarbon sheen during the purging of the well for sampling.

Cross-Gradient Well MW-26 was not sampled due to the presence of SPH during the facilitywide gauging event. Cross-Gradient Well MW-33 was not sampled due to the insufficient volume of groundwater.

Groundwater samples were not collected from RCRA Investigation Wells MW-56, MW-57, MW-61, and MW-66 due to the presence of SPH during the facility-wide gauging event. Groundwater samples were not collected from RCRA Investigation Wells MW-54, MW-55, and MW-58 due to the presence of a hydrocarbon sheen during the purging of the well for sampling. Groundwater samples were not collected from RCRA Investigation Wells MW-60 and MW-69 due to an insufficient volume of groundwater.

Background Wells MW-3, MW-5, and MW-6 were dry and were not sampled.

#### 2.1.4 North Boundary Barrier Sampling

Groundwater samples were collected from observation wells and specified collection wells in April 2018 and August 2018, with the exception of wells that contained evidence of SPH, wells that were dry, or wells that did not contain enough water to collect a sample. Figure 16 and Figure 17 shows the location of the North Boundary Barrier wells that were sampled in April 2018 and August 2018, respectively. A summary of the groundwater results is provided in Section 3.1.4.

#### Semi-Annual Sampling Event

Groundwater samples were collected from the following wells during the Semi-Annual Sampling Event conducted in April 2018:

• Collection Wells: CW 0+60 and CW 25+95; and

• Observation Wells: OW 3+85, OW 22+00, and OW 25+70.

Groundwater samples collected in April 2018 were submitted to Hall Environmental Analytical Laboratory and analyzed for the following:

- VOCs-BTEX and MTBE only by EPA Method 8260B;
- TPH-GRO by EPA Modified Method 8015B;
- TPH-DRO by EPA Modified Method 8015B; and
- TPH-MRO by EPA Method 8015B.

A groundwater sample was not collected from Observation Well OW 1+50 due to the presence of SPH during the facility-wide gauging event. Groundwater samples were not collected from Observation Wells OW 11+15, OW 16+60, and OW 23+10 due to the presence of a hydrocarbon sheen during the purging of the wells for sampling.

Observation Wells OW 6+70, OW 14+10, and OW 19+50 were dry and were not sampled. Groundwater samples were not collected from Observation Wells OW 0+60, OW 5+50, OW 8+10, and OW 23+90. These wells did not yield enough water after purging to sample.

#### Annual Sampling Event

Groundwater samples were collected from the following wells during the Annual Sampling Event conducted in August 2018:

- Collection Wells: CW 0+60 and CW 25+95; and
- Observation Wells: OW 23+10 and OW 25+70.

Groundwater samples collected during the Annual Sampling Event were submitted to Hall Environmental Analytical Laboratory and analyzed for the following:

- VOCs BTEX and MTBE by EPA Method 8260B;
- TPH-GRO by EPA Modified Method 8015B;
- TPH-DRO by EPA Modified Method 8015B; and
- TPH-MRO by EPA Method 8015B.

A groundwater sample was not collected from Observation Well OW 1+50 due to the presence of SPH during the facility-wide gauging event. Groundwater samples were not collected from Observation Wells OW 3+85, OW 11+15, and OW 16+60 due to the presence of a hydrocarbon sheen during the purging of the wells for sampling.

Observation Wells OW 6+70, OW 14+10, and OW 19+50 were dry and were not sampled. Groundwater samples were not collected from Observation Wells OW 0+60, OW 5+50, OW 8+10, OW 22+00, and OW 23+90. These wells did not yield enough water after purging to sample.

#### 2.1.5 San Juan River Bluff Sampling

San Juan River Bluff sampling includes the collection of surface water samples at the outfall locations along the eastern portion of the facility, and at the seeps located along the western portion of the facility. Figure 3 shows the outfall and seep locations. A summary of the surface water analytical results is provided in Section 3.1.5.

#### Semi-Annual Sampling Event

Surface water samples were collected from the following locations during the 2018 Semi-Annual Sampling Event:

- Outfalls: East Outfall #2 and East Outfall #3; and
- Seeps: Seep 1.

Surface water samples collected were submitted to Hall Environmental Analytical Laboratory and analyzed for the following:

- VOCs BTEX and MTBE by EPA Method 8260B (Outfall locations only);
- Total RCRA 8 Metals by EPA Method 6010B/7470 (Outfall locations only);
- Dissolved Metals by EPA Method 6010B/7470 (Outfall locations only);
- Alkalinity by EPA Method 310.1;
- Anions by EPA Method 300.0; and
- Carbon Dioxide by EPA Method 310.1.

Surface water samples were not collected from Seep 2, Seep 3 and Seep 5 due to the absence of an active discharge at each location.

#### Annual Sampling Event

Surface water samples were collected from the following locations during the Annual Sampling Event conducted in August 2018:

- Outfalls: East Outfall #2 and East Outfall #3; and
- Seeps: No seep samples.

Surface water samples were not collected from any of the seeps (i.e., Seep 1, Seep 2, Seep, 3, and Seep 5) due to the absence of an active discharge at each location.

Surface water samples collected during the Annual Sampling Event were submitted to Hall Environmental Analytical Laboratory and analyzed for the following:

- VOCs BTEX and MTBE by EPA Method 8260B;
- Total RCRA 8 Metals by EPA Method 6010B/7470 (Outfall locations only);
- Dissolved Metals by EPA Method 6010B/7470 (Outfall locations only);
- Alkalinity by EPA Method 310.1;
- Anions by EPA Method 300.0; and
- Carbon Dioxide by EPA Method 310.1.

#### 2.1.6 San Juan River Terrace Sampling

San Juan River Terrace sampling includes the collection of surface water samples at four locations along the San Juan River and the collection of groundwater samples at the San Juan River Terrace. A summary of activities conducted and groundwater samples collected that are associated with the bioventing system located at the San Juan River Terrace are included in the previously submitted *River Terrace Voluntary Corrective Measures Bioventing System Report* dated March 2018. Therefore sampling activities associated with the Bioventing System are not included in this report.

Figure 3 shows the approximate surface water sample locations along the San Juan River. A summary of the surface water analytical results is provided in Section 3.1.6.

#### Semi-Annual Sampling Event

Surface water samples were collected from the following locations during the Semi-Annual Sampling Event conducted in April 2018:

• San Juan River: Upstream, North of MW-46, North of MW-45, and Downstream.

Surface water samples collected during the Semi-Annual Sampling Event were submitted to Hall Environmental Analytical Laboratory and analyzed for the following:

- VOCs BTEX and MTBE by EPA Method 8260B;
- TPH-DRO by EPA Method 8015B;
- TPH-GRO by EPA Method 8015B;
- TPH-MRO by EPA Method 8015B;
- Total RCRA 8 Metals by EPA Method 6010B/7470;
- Dissolved Metals by EPA Method 6010B/7470;
- Alkalinity by EPA Method 310.1;
- Anions by EPA Method 300.0;
- Carbon dioxide;
- Specific conductance; and
- Total dissolved solids.

#### Annual Sampling Event

Surface water samples were collected from the following locations during the Annual Sampling Event conducted in August 2018:

• San Juan River: Upstream, North of MW-46, North of MW-45, and Downstream.

Surface water samples collected during the Annual Sampling Event were submitted to Hall Environmental Analytical Laboratory and analyzed for the following:

- VOCs BTEX and MTBE by EPA Method 8260B;
- TPH-DRO by EPA Method 8015B;
- TPH-GRO by EPA Method 8015B;

- TPH-MRO by EPA Method 8015B;
- Total RCRA 8 Metals by EPA Method 6010B/7470;
- Dissolved Metals by EPA Method 6010B/7470;
- Alkalinity by EPA Method 310.1;
- Anions by EPA Method 300.0;
- Specific conductance; and
- Total dissolved solids.

#### 2.1.7 Outfall and Seep Inspections

Weekly visual inspections of Seep 1, Seep 2, Seep 3, and Seep 5 along the San Juan River Bluff, which includes the East Fork area, were conducted in 2018. Figure 3 shows the location of the outfalls and seeps. A summary of the inspections performed is provided in Section 3.1.7.

# 2.2 Total Fluids Recovery Systems

#### 2.2.1 Groundwater Recovery System

The Bloomfield Facility operates a total fluids pumping system used to recover SPH and hydrocarbon impacted groundwater for treatment and disposal. This is accomplished by actively pumping wells within the groundwater impacted area. Recovered fluids are pumped to the on-site API separator for product recovery. The remaining recovered fluid is pumped through the WWTS prior to disposal. The groundwater recovery system was operational throughout 2018. The wells that operated as active recovery wells in 2018 are RW-1, RW-2, RW-3, RW-9, RW-14, RW-15, RW-16, RW-17, RW-19, MW-20, RW-22, RW-23, RW-28, RW-42, MW-55, MW-56, MW-57, and MW-58. Figure 2 shows the location of the recovery wells within the Facility. An operational summary of the groundwater recovery system is included in Section 3.3.1.

# 2.2.2 North Boundary Barrier Wall Collection System

The North Boundary Barrier Wall, which was installed by April 2005, consists of a 2,700 foot long bentonite slurry wall that extends two to five feet into the Nacimiento Formation. The primary purpose of the wall is to prevent the migration of hydrocarbon-impacted groundwater towards the San Juan River. The collection system consists of 15 collection wells positioned along the facility-side of the barrier wall. For every collection well, there was also an observation well installed along the river-side of the barrier wall. Bloomfield Terminal personnel continued to monitor fluid levels on both sides of the barrier wall in 2018 by collecting depth-towater and depth-to-product measurements. Figure 2 shows the location of the collection wells and observation wells along the North Boundary Barrier Wall. A summary of the data collected along the North Boundary Barrier Wall is provided in Section 3.3.2.

# 2.2.3 Hammond Ditch Recovery System

The Hammond Ditch Recovery System consists of recovery Tank 37, located along the western portion of the facility, and a French Drain system that was constructed below the concrete-lined Hammond ditch. Tank 37 collects groundwater from two 8-inch influent lines connected to the perforated sub-drain (the French Drain) beneath the Hammond Irrigation Canal. Tank 37 is

equipped with a liquid level float control system and dedicated flow meter. Recovered water from Tank 37 is automatically pumped through a flow meter to the API Separator. The location of Tank 37 is shown on Figure 3.

The Hammond Ditch Recovery System serves as a hydraulic relief mechanism for groundwater that mounds along the Facility-side of the north barrier wall. Figure 3 shows the location of Tank 37. A summary of operational data for the Hammond Ditch Recovery System is included in Section 3.3.3.

# 2.2.4 River Terrace Remediation System

The River Terrace Bioventing System commenced operation in January 2006. A summary of activities associated with the River Terrace Bioventing System are submitted separately to the agencies in March of each year.

# 2.2.5 East Outfall Recovery System

Outfall 1 is equipped with a holding tank and automatic pumping system. Water from Outfall 1 discharges into Tank 38 directly and then is pumped to the on-site WWTS prior to disposal. Figure 3 shows the location of Tank 38.

The flow rate of recovered water entering Tank 38 is dependent upon the operation of the Hammond Ditch, which is located just south of Tank 38. A summary of the operational data of the East Outfall Recovery System for 2018 is included in Section 3.3.4.

# 2.3 Waste Disposal

Western Refining indefinitely suspended refining operations at the Facility on November 23, 2009. The crude unloading and product loading racks, storage tanks and other supporting equipment remain in operation. Recovered water from on-site remediation activities and facility operations is treated through the on-site WWTS. Treated water is then disposed of through the on-site Class I injection well or evaporation ponds.

Significantly less waste is routinely generated since the suspension of refining operations in November 2009. The on-site landfill is no longer operational, and therefore all operational waste generated is properly characterized and disposed of off-site. Additional information regarding waste disposal activities is provided in Section 3.5.

# SECTION 3.0 RESULTS SUMMARY

The following is a summary of the data collected, visual inspections conducted, and analytical results received during monitoring and testing performed in 2018. Figure 8 and Figure 9 provide a summary of the BTEX concentrations detected during the April 2018 and August 2018 sampling events, respectively. Figure 10 shows the results for chloride, sulfate, nitrate, and total dissolved solids (TDS) for April 2018. Figures 11 through 15 depict the analytical results for naphthalene, chloride, sulfate, nitrate, and TDS for August 2018.

# 3.1 Groundwater and Surface Water Monitoring

A summary of the groundwater and surface water analytical results for samples collected over the past few years are included in Table 3 through Table 10. Screening levels used to evaluate the groundwater condition at the Bloomfield Terminal are reflective of the same conservative screening levels currently used for evaluation of on-going RCRA Investigation activities. Sample results included in the analytical summary tables that exceed the respective regulatory screening levels are highlighted in yellow, while all detected results are bolded. A copy of the respective analytical reports is included in Appendix A. The analytical reports contain the respective quality assurance/quality control data reviews and validation.

# 3.1.1 Fluid Level Measurements

Depth-to-groundwater and depth-to-product measurements were collected at all facility monitoring wells, recovery wells, observation wells, and collection wells in April and August 2018. Additional fluid measurements were collected at the sump wells periodically throughout the year to monitor fluid levels along the north side of the facility. The fluid pumping wells were turned off and the groundwater was allowed to stabilize for a minimum of 48-hours prior to the collection of fluid levels within the Bloomfield Terminal during both the April and August sampling events. Figure 2 shows the location of the wells within the facility.

Using the fluid level measurements collected in April and August 2018, groundwater potentiometric surface elevations were calculated. The groundwater elevation data was used to develop groundwater potentiometric surface maps, which show the general direction of groundwater flow within the facility. Table 1 provides a summary of the fluid level measurements collected in 2018. Figure 4 and Figure 5 represent the groundwater contours developed from data collected in April 2018 and August 2018, respectively. The groundwater potentiometric surface contours show that groundwater generally flows in a northwest direction. A discussion of the SPH data collected is provided in Section 3.2 of this report.

# 3.1.2 Groundwater Field Measurements

Prior to collecting groundwater samples, each well was purged of a minimum of three well volumes using a disposable bailer. Groundwater field parameters (temperature, pH, conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), and total dissolved solids (TDS)) were collected every two gallons or after purging one well volume, whichever was

less. The total volume purged at each well was determined once the pH, temperature, and conductivity field parameters stabilized to within 10 percent for three measurements. The field parameters were collected using a YSI Professional Plus instrument. Field equipment calibration procedures performed prior to each sampling event are summarized in Section 4 of the Facility-Wide Groundwater Monitoring Plan. Table 2 provides a summary of the groundwater field parameters collected during the April 2018 and August 2018 sampling events. Field parameters were also collected from water samples collected at the East Outfalls, Seeps, and the San Juan River locations.

# 3.1.3 Terminal Complex Sampling

# Terminal Wells

Volatile organic compounds detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018, with the exception of the sample collected from MW-31 in August. The following exceedances were reported:

- 1,2,4-Trimethylbenzene was detected above the respective screening level of 15 ug/l. The detected concentration was 940 ug/l.
- 1,3,5-Trimethylbenzene was detected above the respective screening level of 12 ug/l. The detected concentration was 24 ug/l.
- 1-Methylnaphthalene was detected above the respective screening level of 11 ug/l. The detected concentration was 45 ug/l.
- 2-Methylnaphthalene was detected above the respective screening level of 36 ug/l. The detected concentration was 45 ug/l.
- Benzene was detected above the respective screening level of 5 ug/l. The detected concentration was 1,500 ug/l.
- Ethylbenzene was detected above the respective screening level of 700 ug/l. The detected concentration was 820 ug/l.
- Naphthalene was detected above the respective screening level of 1.65 ug/l. The concentration detected above the screening level was 160 ug/l.
- Toluene was detected above the respective screening level of 750 ug/l. The detected concentration was 760 ug/l.
- Xylenes were detected above the respective screening level of 620 ug/l. The detected concentration was 1,400 ug/l.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018, with the following exceptions:

- Chloride was detected above the screening level of 250 mg/L at MW-52 in August 2018 with a detected concentration of 880 mg/L.
- Nitrite and nitrate were reported as a combined concentration in two samples where the applicable screening levels for nitrite (1.0 mg/L) and nitrate (10 mg/L), were exceeded. This occurred in the samples collected at MW-29 and MW-52 with a reported combined concentrations of 7.1 mg/L and 27 mg/L, respectively.

• Sulfate was detected above the screening level of 600 mg/L at MW-44 and MW-52 in August 2018 with detected concentrations of 3,000 mg/L and 1,100 mg/L, respectively.

There were no total metals constituents detected above their respective screening levels in samples collected in 2018.

Dissolved metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018, with exception of manganese. Manganese was detected above the respective screening level of 0.2 mg/L at MW-29, MW-31, MW-44, and MW-52. The detected concentrations above the screening levels ranged between 0.65 mg/L and 3.5 mg/L, with the highest concentration detected at MW-52 in August 2018.

Total petroleum hydrocarbons were detected above the laboratory detection limits in the GRO and DRO analyses. The detected concentrations were below the screening levels with the exception of DRO fraction detected in MW-31. DRO was detected above the screening level of 0.0398 mg/L for unknown oil at a concentration of 0.64 mg/L in August 2018.

A summary of the analytical results for samples collected at the Terminal Complex Wells is provided in Table 3.

#### Cross-Gradient Wells

The following volatile organic compounds were detected above the laboratory detection limits in samples collected in 2018.

- 1-Methylnaphthalene MW-1 August 2018;
- 2-Methylnaphthalene MW-1 August 2018;
- MTBE MW-13 August 2018; and
- Naphthalene MW-1 August 2018.

None of the volatile organic compound concentrations exceeded their respective screening levels.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018, with the following exceptions:

- Chloride was detected above the respective screening level of 250 mg/L at MW-27 and MW-32 at concentrations of 870 mg/L and 680 mg/L, respectively, in August 2018.
- Nitrite and nitrate were reported as a combined concentration in two samples where the applicable screening level for nitrite (1.0 mg/L), was exceeded. This occurred in the samples collected at MW-13 and MW-32 with a reported combined concentrations of 3.5 mg/L and 43 mg/L, respectively. Nitrate was exceeded in one sample collect at MW-32 in August 2018 with a reported concentration of 43 mg/L vs. the screening level of 10 mg/L.
- Sulfate was detected above the respective screening level of 600 mg/L at MW-13, MW-27, and MW-32. The detected concentrations ranged between 920 mg/L and 3100 mg/L, with the highest concentration detected at MW-27 in August 2018.

There were no total metals constituents detected above their respective screening levels in samples collected in 2018.

Dissolved metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018, with the exception of manganese.

Manganese was detected above the respective screening level of 0.2 mg/L at MW-13 and MW-27. The detected concentrations were 1.6 mg/L and 0.75 mg/L, respectively.

Total petroleum hydrocarbons were detected in one sample collected at MW-27 for the DRO fraction at a concentration of 3.2 mg/L vs. the screening level of 0.0398 mg/L. Total petroleum hydrocarbons were detected above the laboratory detection limit in the GRO fraction for those samples collected from MW-1 and MW-13.

A summary of the analytical results for samples collected at the Cross-Gradient Wells is provided in Table 4.

#### Downgradient Wells

Volatile organic compounds detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018, with the following exceptions:

- 1,2,4-Trimethylbenzene was detected above the screening level of 15 ug/l at MW-11 at a concentration of 67 ug/l;
- 1-Methylnaphthalene was detected above the respective screening level of 11 ug/l at MW-11 with a concentration of 15 ug/l in August 2018;
- Benzene was detected in samples collected at MW-11 at 66 ug/l, which exceeds the screening level of 5 ug/l; and
- Naphthalene was detected above the respective screening level of 1.65 ug/l at MW-11. The detected concentration was 98 ug/l.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018.

Total metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018, with the exception of arsenic. Arsenic was detected above the screening level of 0.01 mg/L at MW-34 (0.015 mg/L).

Dissolved metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018, with the following exceptions:

- Arsenic was detected above the screening level of 0.01 mg/L at MW-11 (0.021 mg/L);
- Iron was detected above the respective screening level of 1.0 mg/L at MW-11(1.9 mg/L) and MW-34 (3 mg/L); and
- Manganese was detected above the respective screening level of 0.2 mg/L at MW-11, MW-34, MW-35, MW-37, and MW-38. The detected concentrations above the screening level ranged between 1.1 mg/L and 3.8 mg/L, with the highest concentration detected at MW-34 in August 2018.

Total petroleum hydrocarbons were detected in the GRO and DRO fractions. The detected GRO concentrations ranged from 0.18 mg/L to 1.3 mg/L with the highest concentration at MW-11. The DRO fraction was detected at concentrations above the screening level of 0.0398 mg/L in the samples from MW-11 and MW-34. The concentrations reported were 0.45 mg/L (MW-11) and 0.4 mg/L (MW-34).

A summary of the analytical results for samples collected at the Downgradient Wells is provided in Table 5.

#### RCRA Wells

Volatile organic compounds detected above the laboratory detection limit were below their respective screening levels in samples collected in August 2018, with the following exceptions:

- 1,2,4-Trimethylbenzene was detected above the respective screening level of 15 ug/l at MW-65 with a concentration of 590 ug/l;
- 1,2-Dichloroethane was detected above the respective screening level of 5 ug/l at MW-65 with a concentration of 170 ug/l;
- 1,3,5-Trimethylbenzene was detected above the respective screening level of 12 ug/l at MW-65 with a concentration of 41 ug/l;
- 1-Methylnaphthalene was detected above the screening level of 11 ug/l at MW-65 with a concentration of 110 ug/l. 1-Methylnaphthalene was also detected above the screening level in the semi-volatile analysis of the sample collected at MW-65, but at a lower concentration of 100 ug/l;
- Benzene was detected above the respective screening level of 5 ug/l at MW-59 and MW-65. The detected concentrations were 23 ug/l and 4,500 ug/l, respectively;
- Ethylbenzene was detected above the respective screening level of 700 ug/l at MW-65, with a concentration detected of 1,800 ug/l;
- MTBE was detected above the respective screening level of 143 ug/l at MW-59 (1,400 mg/L) and MW-65 (4,600 mg/L); and
- Naphthalene was detected above the respective screening level of 1.65 ug/l at MW-65 with a concentration of 51 ug/l. Naphthalene was also detected above the screening level in the semi-volatile analysis of the sample collected at MW-65, but at a lower concentration of 21 ug/l;

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in August 2018, with the following exceptions:

- Chloride was detected above the respective screening level of 250 mg/L at MW-53, MW-64, and MW-70. The detected concentrations above the screening level ranged between 280 mg/L and 890 mg/L. The highest concentration was detected at MW-53;
- Nitrite was detected above the respective screening level of 1 mg/L at MW-53, MW-67, and MW-68, with concentrations ranging from 4.5 mg/L to 15 mg/L. The highest concentration was detected at MW-53;
- Nitrate was detected above the respective screening level of 10 mg/L at MW-53, MW-63, and MW-64, with concentrations ranging from 15 mg/L to 52 mg/L. The highest concentration was detected at MW-64; and
- Sulfate was detected above the respective screening level of 600 mg/L at MW-53, MW-62, MW-63, MW-64, and MW-70. The detected concentrations ranged between 900 mg/L and 3,600 mg/L, with the highest concentration detected at MW-62.

None of the total metals analyses indicated concentrations of constituents detected above their respective screening levels in samples collected in August 2018.

Dissolved metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in August 2018, with the following exceptions:

- Arsenic was detected above the screening level of 0.01 mg/L in groundwater sample collected at MW-51 (0.020 mg/L);
- Iron was detected above the respective screening level of 1.0 mg/L at MW-59, MW-65, and MW-70. The detected concentrations above screening levels ranged between 5.3 mg/L and 9.6 mg/L with the highest concentration at MW-70; and
- Manganese was detected above the respective screening level of 0.2 mg/L at MW-51, MW-53, MW-59, MW-62, MW-63, MW-65, and MW-70. The detected concentrations ranged between 0.48 mg/L and 2.5 mg/L, with the highest concentration detected at MW-51.

Total petroleum hydrocarbons were detected above the laboratory detection limit in the GRO and DRO fractions. The DRO concentration exceeded the screening level of 0.0398 mg/L in groundwater sample collected at MW-65 a concentration of 2.8 mg/L.

A summary of the analytical results for samples collected at the RCRA Wells in August 2018 is provided in Table 6.

#### 3.1.4 North Boundary Barrier Sampling

#### **Collection Wells**

No volatile organic compounds were detected above their respective screening levels in samples collected in 2018. Total petroleum hydrocarbons were detected above the laboratory detection limit in the GRO and DRO fractions. The DRO concentration reported in the sample from CW 0+60 exceeded the screening level of 0.0398 mg/L and was reported at 1.2 mg/L in April 2018.

A summary of the analytical results for samples collected at the collection wells in 2018 is provided in Table 7.

#### **Observation Wells**

Volatile organic compounds detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018.

Total petroleum hydrocarbons were detected above the laboratory detection limit in the GRO, DRO, and MRO fractions. The DRO concentration in the sample from OW 3+85 (7.9 mg/L) exceeded the screening level (0.0398 mg/L). The MRO concentration from OW 3+85 (3.7 mg/L) exceeded the screening level (0.0398 mg/L).

A summary of the analytical results for samples collected at the observation wells in 2018 is provided in Table 7.

# 3.1.5 San Juan River Bluff Sampling

#### <u>Outfalls</u>

Samples were collected from East Outfall #2 and East Outfall #3 in April and August 2018. A summary of the analytical results for samples collected at East Outfall #2 and East Outfall #3 in 2018 is provided in Table 8.

Volatile organic compounds were not detected in samples collected in 2018. General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018.

For the total metals analyses, none of the metals were detected at a concentration above the screening levels in April and August 2018. All dissolved metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in April and August 2018.

# <u>Seeps</u>

Samples were only collected from Seep 1 in May 2018, as the other seep locations were dry in April and August 2018.

The groundwater sample collected from Seep 1 was not analyzed for Target List Volatile Organic Compounds.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2018, with the following exception:

- Chloride was detected above the respective screening level of 250 mg/L at Seep 1 in May 2018 at concentrations of 270 mg/L.
- Sulfate was detected above the respective screening level of 600 mg/L at Seep 1 in May 2018 at concentrations of 1,000 mg/L.

A summary of the analytical results for samples collected at the Seeps in 2018 is provided in Table 9.

# 3.1.6 San Juan River Terrace Sampling

Sample locations related to the bioventing system are discussed in a separate report, and therefore are not included in this submittal. However, surface water samples were collected at four locations along the San Juan River in 2018. Samples were collected in April 2018 and August 2018 upstream of the Terminal, north of MW-46, north of MW-45, and downstream of the Terminal. A summary of the analytical results for samples is provided in Table 10.

Volatile organic compounds were not detected above laboratory detection limits in any of the samples for 2018. Similarly, Total Petroleum Hydrocarbons were not detected above laboratory detection limits in surface water samples collected for 2018. General chemistry parameters detected above the laboratory detection limits were below their respective screening levels in samples collected in 2018.

Total and dissolved metal constituents detected above the laboratory detection limits were below their respective screening levels in samples collected in 2018. Figure 3 shows the location of the San Juan River samples in relation to the Bloomfield Terminal.

# 3.1.7 Outfall and Seep Inspections

Bi-monthly visual inspections of Seep 1, Seep 2, Seep 3, and Seep 5 and along the San Juan River Bluff, including the East Fork area, were conducted in 2018. Inspections of the draws

north of the barrier wall and analysis of samples of water collected in the seeps indicate that the barrier wall is preventing migration of contaminated groundwater toward the San Juan River.

Visual inspection of the East Fork area indicates that the flow rate at this seep location has decreased to less than 1 gallon/minute. The flow rate at this location does not appear to be impacted by the operation of the Hammond Ditch. Figure 3 shows the location of the outfalls and seeps in relation to the Bloomfield Terminal.

# 3.2 Separate-Phase Hydrocarbons

Field measurements collected in April and August 2018 were also used to determine product thickness in areas where SPH was detected. In April 2018, SPH was identified in 14 wells. The product thickness detected ranged between 0.01 feet and 0.75 feet, with the most product detected at monitor well MW-77. In August 2018, SPH was identified in 17 wells. The product thickness ranged between 0.01 feet and 1.25 feet, with the most product detected at recovery well RW-19. Figure 6 and Figure 7 show a summary of the product thickness detected in April 2018 and August 2018, respectively.

Product had been detected in the groundwater prior to suspension of refining operations in November 2009. Review of the past 10 years of data collected shows SPH to be present in four general areas of the facility; the Terminals Area, the Tank Farm Area, the former Refinery Process Area, and the North Boundary Barrier Area. The following is a brief summary of the SPH trends observed as reported each year. A review of the historic SPH measurements collected are included in the Facility-Wide Groundwater Monitoring Plan dated December 2007 and in subsequent Annual Groundwater Remediation & Monitoring Reports submitted in April of each year.

# Terminals Area

The area historically referred to as the "Terminals Area" is located south of County Road 4990. Primary operations in this area include product loading and unloading, crude unloading, and product storage. At the Terminal Area, SPH has been localized to two wells (MW-61 and MW-66). These wells were installed in 2009 as part of the on-going RCRA investigation activities. Over the past four and a half years, SPH has been detected at MW-61, which is located just east of the Terminal office building. In the most recent measurement in August 2018, 0.30 feet of SPH was observed in MW-61. The SPH thickness at MW-61 has fluctuated between 0.21 feet and 0.98 feet. At MW-66, located west of Tank 45, the amount of SPH has fluctuated between 0.0 feet and 0.32 feet, with 0.07 feet measured most recently in August 2018.

# Tank Farm Area

The Tank Farm Area is located in the eastern portion of the facility, north of County Road 4990. This area is equipped with four total fluids recovery wells located along the center dike area (RW-14, RW-15, RW-16, and RW-17). Recovery wells RW-14 and RW-16 are equipped with electrical submersible pumps, while RW-15 and RW-17 are equipped with dedicated pneumatic pumps that operate on a timer. All fluids pumped from these wells are routed to the on-site WWTP for product recovery and treatment.

#### Former Refinery Process Area

In 2005, a 2,700-foot long bentonite slurry wall was installed along the western and northern boundary of the former process area. This north boundary barrier provides hydraulic control for product and groundwater that exists at the Bloomfield facility. Several monitoring wells located within the vicinity of the former refinery process area have shown detectable amounts of SPH prior to the suspension of refinery operations in November 2009. Total fluids recovery wells, as well as the French drain fluids collection system located below the Hammond Ditch in this area, provide hydraulic relief and enhance product recovery efforts.

Two wells within the warehouse area have shown detectable SPH. Monitoring well MW-54, which was installed in 2008, has shown decreasing levels of SPH since 2010. In August 2016, MW-54 contained only approximately 0.01 feet of SPH and no SPH was measured in 2018. Recovery well RW-1 is an active total fluids recovery well. This well operates at a constant flowrate of approximately 2 gpm. The amount of SPH at RW-1 has fluctuated since 2008, with no SPH measured during 2018.

Two active recovery wells (RW-2 and RW-3) are located along the southern property boundary and are equipped with dedicated pneumatic total fluids pumps. In 2018, RW-2 did not contain any measurable SPH. RW-3 has shown traces of SPH prior to returning to operation in 2012, with SPH detected at 0.05 feet or less. No measurable SPH was detected in RW-3 in 2018.

Monitoring well MW-41, located adjacent to the former crude process unit, has shown fluctuating levels of SPH over the years. The range of SPH detected has been between 0.0 feet and 1.18 feet since 2007. As of August 2018, 0.10 feet of SPH was measured in MW-41.

The SPH level at RW-42, an active recovery well located upgradient of MW-41, has also fluctuated over time. The amount of SPH has ranged between 0.00 feet and 0.90 feet since 2007. In August 2018, there was no SPH detected at RW-42.

In the area near the WWTP and north of the former process units there are several wells in which SPH has been detected over the years. It is expected to see SPH levels fluctuate in this area due to the numerous active recovery wells, as well as, the existence of the north boundary barrier providing hydraulic control for all groundwater beneath the former process areas. To further enhance the product recovery efforts in this area, work has been done to equip five existing monitoring wells with dedicated pneumatic pumps for total fluids recovery. Monitoring wells MW-55, MW-56, MW-57, MW-58, and MW-20 have been converted to recovery wells. These wells are located in the area where SPH is currently most prevalent. The wells have been operational as of 2013 and continued to operate through 2018.

#### North Boundary Barrier Area

In 2005, a 2,700-foot long bentonite slurry wall was installed along the western and northern boundary of the former process area. This north boundary barrier provides hydraulic control for product and groundwater within the Bloomfield facility. Monitoring wells and observation wells located along the river-side of the slurry wall have shown intermittent detections of SPH. The greatest of which was 0.08 feet in April 2014 in MW-45; however, no SPH has been detected in

excess of 0.01 feet since that time. The amount of groundwater detected in these wells is significantly less than the wells located on the facility-side of the wall, giving proof that the hydraulic barrier is effective. The intermittent detections of SPH are believed to be the residual effect of SPH in the area that existed prior to installation of the slurry wall.

# 3.3 Total Fluids Recovery Systems

# 3.3.1 Groundwater Recovery System

In 2018, 18 wells operated as total fluids recovery wells. The wells used for total fluids recovery were RW-1, RW-2, RW-3, RW-9, RW-14, RW-15, RW-16, RW-17, RW-19, MW-20, RW-22, RW-23, RW-28, RW-42, MW-55, MW-56, MW-57, and MW-58. In the past, Western estimated the total gallons pumped (SPH and groundwater) from the recovery wells on an annual basis. The recovery wells are not equipped with individual flow meters. Most wells are equipped with pneumatic pumps that run on a timer system. Based on the timer setting and field verified flow rates, the total gallons pumped per well over time was calculated. The wells are routinely checked to make sure they are in service and to make any repairs, as necessary, to return wells to service. Because it is not possible to know with certainty how long an individual pump may have been out of service between inspections, Western has not attempted to estimate the annual recovery volumes for the wells.

# 3.3.2 North Boundary Barrier Wall Collection System

Depth-to-groundwater measurements collected in April 2018 and August 2018 indicate that the barrier wall continues to provide a hydraulic barrier for groundwater below the facility. Based on the data collected in 2018, seven of the fourteen observation wells contain little to no fluid (i.e., measuring less than 0.5 ft of fluid in the well at any one time). Of the 13 well pairs (i.e., observation and collection wells on opposite sides of the slurry wall) where water is present in the observation wells, the average difference in water level elevations across the slurry wall is 6.84 feet. This difference in water level elevations immediately across the slurry wall is further evidence of its continued effectiveness.

Table 1 provides a summary of the fluids level measurements collected from the wells along the north boundary barrier wall.

# 3.3.3 Hammond Ditch Recovery System

The Hammond Ditch Recovery System serves as a hydraulic relief system for groundwater accumulating within the western portion of the Terminal on the up-gradient side of the slurry wall. All water recovered through the Hammond Ditch French drain west of the pipeline easement discharges to Tank 37, which is then transferred to the API separator for product recovery. The location of Tank 37 is shown on Figures 2 and 3. Terminal Operators inspect the operation of recovery system and Tank 37 daily and record the amount of water recovered in the tank using a flow meter located on the discharge end of the Tank 37 transfer pump. In 2018, the total volume of fluids recovered at Tank 37 was approximately 20,393 barrels.

# 3.3.4 East Outfall Recovery System

Water recovered through the Hammond Ditch French drain east of the pipeline easement discharges through three outfalls (i.e., Outfall 1, Outfall 2 and Outfall 3). Total fluids from Outfall 1 is recovered via Tank 38 and transferred to the WWTS for treatment prior to disposal through the on-site injection well. Figures 2 and 3 show the location of Tank 38.

Tank 38 piping is equipped with a flow meter to measure the total gallons transferred to the WWTP. In 2018, the total fluid volume recovered at Tank 38 was approximately 106,349 barrels.

# 3.4 Waste Disposal

Western Refining indefinitely suspended refining operations at the Bloomfield Facility on November 23, 2009. The crude unloading and product loading racks, storage tanks and other supporting equipment remain in operation. Recovered water from on-site remediation activities and facility operations is treated through the on-site WWTS. Treated water is then disposed of through an on-site Class I non-hazardous injection well and/or two on-site evaporations ponds. The monthly and annual cumulative volumes of water discharged to the evaporation ponds are summarized in Table 11.

Significantly less waste is routinely generated since the suspension of refining operations in November 2009. The on-site landfill is no longer operational, and therefore all operational waste generated is properly characterized and disposed of off-site. There was no off-site disposal of hazardous wastes in 2018.

# SECTION 4.0 CONCLUSIONS

The following is a summary of conclusions based on monitoring and inspection data collected in 2018.

# 4.1 Groundwater Monitoring

Western has in-place a Facility-Wide Groundwater Monitoring Program that is updated annually as required under the 2007 Consent Order issued by NMED-HWB. Updates to this program include incorporation of additional wells installed as part of on-going completed RCRA Investigation activities. Such updates are proposed for agency approval in June of each year. Screening levels used to evaluate the groundwater condition at the Bloomfield Terminal are reflective of the same conservative screening levels currently used for evaluation of on-going RCRA Investigation activities. Tables 3 through 10 include the applicable screening level for each respective analyte. Sample results included in the analytical summary tables that exceed the respective screening levels are highlighted in yellow and all detected results are bolded. Figure 8 and Figure 9 shows a summary of the BTEX and MTBE concentrations detected sitewide during the April 2018 and August 2018 sampling events, respectively. Figure 10 shows the results for chloride, sulfate, nitrate, and total dissolved solids (TDS) for April 2018. Figures 11 through 15 show the analytical results for naphthalene, chloride, sulfate, nitrate, and TDS for August 2018.

Depth-to-groundwater and depth-to-product measurements were collected at all facility monitoring wells, recovery wells, observation wells, collection wells and sump wells in 2018. Groundwater elevation contours show that groundwater flows in the general northwest direction, with the groundwater under the process areas flowing towards the north boundary barrier wall and Hammond Ditch Collection System.

# Groundwater Quality

Based on the analytical results for groundwater monitoring collected in 2018, the following constituents were detected at concentrations in groundwater above their respective most conservative screening levels.

- Organic Compounds
  - o 1,2,4-Trimethylbenzene;
  - o 1,3,5-Trimethylbenzene;
  - o 1,2-Dichloroethane;
  - o 1-Methylnaphthalene;
  - o 2-Methylnaphthalene;
  - o Naphthalene;
  - o Benzene;
  - o Ethylbenzene;
  - o MTBE;
- o **Toluene**;
- o Xylenes;
- Diesel Range Organics; and
- o Motor Oil Range Organics.
- General Chemistry
  - o Chloride;
  - o Sulfate;
  - o Nitrite; and
  - o Nitrate.
- Total Metals;
  - o Arsenic
- Dissolved Metals
  - o Arsenic;
  - o Iron; and
  - o Manganese.

An investigation of naturally occurring (i.e., background) concentrations of constituents in groundwater was initiated in January 2012, with the last submission to NMED in January 2015. As of February 2019, NMED has not yet responded to the January 2015 *Investigation Report Background Concentrations*, thus background concentrations are not yet available for comparison to detected results.

#### 4.2 Outfall and Seep Inspections

Bi-monthly visual inspections of the seeps and along the San Juan River Bluff, which includes the East Fork Area, were conducted in 2018. No visual sheens or odors were identified during the inspections. Fluid in the Seeps is most often prevalent during the spring, corresponding with the times of higher precipitation. In 2018, only Seep 1 had sufficient discharge for sample collection in April and none of the seeps had sufficient discharge to allow for sample collection in August.

#### 4.3 Total Fluids Recovery Systems

The Bloomfield Terminal operates and monitors several fluid recovery systems within the facility, which include:

- Groundwater Recovery System using recovery wells within the Terminal Complex;
- North Boundary Barrier Collection System;
- Hammond Ditch Recovery System;
- River Terrace Remediation system; and
- East Outfall Recovery System.

All fluids recovered from these systems, with the exception of the effluent from the River Terrace Remediation System, are pumped to the on-site WWTS for treatment prior to disposal through the on-site injection well or evaporation ponds. Water from the River Terrace is treated separately and is re-used as plant water for facility operations.

## SECTION 5.0 REFERENCES

- Groundwater Technology, Inc., 1994, RCRA Facility Investigation/Corrective Measures Study Report Bloomfield Refining Company #50 County Road 4990 Bloomfield, New Mexico.
- NMED, 2007, State of New Mexico Environment Department v. San Juan Refining Company and Giant Industries, Inc.; Order July 27, 2007.
- NMOCD, 2017, New Mexico Oil Conservation Division, Discharge Permit Renewal (GW-001) Bloomfield Refinery, June 8, 2017.

# **Tables**

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5519.21	21.40	NPP	18.16	5501.05	NPP
	04/16/18	5519.21	21.41	NPP	17.68	5501.53	NPP
	08/22/17	5519.21	21.41	NPP	17.35	5501.86	NPP
	04/18/17	5519.21	21.56	NPP	17.62	5501.59	NPP
	08/15/16	5519.21	21.56	NPP	16.83	5502.38	NPP
	04/15/16	5519.21	21.56	NPP	17.23	5501.98	NPP
10100-01	08/18/15	5519.21	21.56	NPP	16.95	5502.26	NPP
	04/20/15	5519.21	21.56	NPP	16.95	5502.26	NPP
	08/18/14	5519.21	21.56	NPP	17.14	5502.07	NPP
	04/02/14	5519.21	21.56	NPP	17.60	5501.61	NPP
	08/05/13	5519.21	21.56	NPP	17.18	5502.03	NPP
	04/08/13	5519.21	21.56	NPP	17.51	5501.70	NPP
	08/01/18	5539.27	36.50	NPP	36.50	5502.77	NPP
	04/16/18	5539.27	36.50	NPP	36.50	5502.77	NPP
	08/22/17	5539.27	36.46	NPP	36.46	5502.81	NPP
	04/18/17	5539.27	36.75	NPP	NWP	NWP	NPP
	08/15/16	5539.27	36.75	NPP	36.29	5502.98	NPP
	04/15/16	5539.27	36.75	NPP	36.33	5502.94	NPP
10100-03	08/18/15	5539.27	36.75	NPP	36.13	5503.14	NPP
	04/27/15	5539.27	36.75	NPP	36.25	5503.02	NPP
	08/18/14	5539.27	36.75	NPP	36.49	5502.78	NPP
	04/02/14	5539.27	36.75	NPP	NWP	NWP	NPP
	08/05/13	5539.27	36.75	NPP	NWP	NWP	NPP
	04/08/13	5539.27	36.75	NPP	NWP	NWP	NPP
	08/01/18	5527.78	29.77	NPP	27.47	5500.31	NPP
	04/16/18	5527.78	29.76	NPP	27.31	5500.47	NPP
	08/22/17	5527.78	29.82	NPP	27.10	5500.68	NPP
	04/17/17	5527.78	30.48	NPP	27.85	5499.93	NPP
	08/15/16	5527.78	30.48	NPP	27.21	5500.57	NPP
MW_04	04/15/16	5527.78	30.48	NPP	27.10	5500.68	NPP
10100-04	08/25/15	5527.78	30.48	NPP	27.94	5499.84	NPP
	04/27/15	5527.78	30.48	NPP	27.12	5500.66	NPP
	08/18/14	5527.78	30.48	NPP	27.47	5500.31	NPP
	04/02/14	5527.78	30.48	NPP	27.45	5500.33	NPP
	08/05/13	5527.78	30.48	NPP	27.45	5500.33	NPP
	04/08/13	5527.78	30.48	NPP	27.41	5500.37	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/02/18	5548.56	31.15	NPP	NWP	NWP	NPP
	04/16/18	5548.56	31.15	NPP	NWP	NWP	NPP
	08/22/17	5548.56	37.20	NPP	NWP	NWP	NPP
	04/18/17	5548.56	37.20	NPP	NWP	NWP	NPP
	08/16/16	5548.56	37.20	NPP	NWP	NWP	NPP
	04/18/16	5548.56	37.20	NPP	NWP	NWP	NPP
05-7710	08/13/15	5548.56	37.20	NPP	NWP	NWP	NPP
	04/27/15	5548.56	37.20	NPP	NWP	NWP	NPP
	08/18/14	5548.56	37.20	NPP	NWP	NWP	NPP
	04/02/14	5548.56	37.20	NPP	NWP	NWP	NPP
	08/05/13	5548.56	37.20	NPP	NWP	NWP	NPP
	04/08/13	5548.56	37.20	NPP	NWP	NWP	NPP
	08/02/18	5554.61	47.45	NPP	NWP	NWP	NPP
	04/16/18	5554.61	47.45	NPP	NWP	NWP	NPP
	08/22/17	5554.61	48.00	NPP	NWP	NWP	NPP
	04/18/17	5554.61	48.00	NPP	NWP	NWP	NPP
	08/16/16	5554.61	48.00	NPP	NWP	NWP	NPP
	04/18/16	5554.61	48.00	NPP	NWP	NWP	NPP
10100-00	08/13/15	5554.61	48.00	NPP	NWP	NWP	NPP
	04/27/15	5554.61	48.00	NPP	NWP	NWP	NPP
	08/18/14	5554.61	48.00	NPP	NWP	NWP	NPP
	04/02/14	5554.61	48.00	NPP	NWP	NWP	NPP
	08/05/13	5554.61	48.00	NPP	NWP	NWP	NPP
	04/08/13	5554.61	48.00	NPP	NWP	NWP	NPP
	08/01/18	5527.66	62.09	NPP	27.79	5499.87	NPP
	04/16/18	5527.66	62.08	NPP	27.40	5500.26	NPP
	08/22/17	5527.66	62.05	NPP	27.62	5500.04	NPP
	04/17/17	5527.66	62.61	NPP	27.28	5500.38	NPP
	08/15/16	5527.66	62.61	NPP	27.74	5499.92	NPP
MW-07	04/15/16	5527.66	62.61	NPP	27.31	5500.35	NPP
	08/13/15	5527.66	62.61	NPP	27.75	5499.91	NPP
	04/27/15	5527.66	62.61	NPP	27.43	5500.23	NPP
	08/18/14	5527.66	62.61	NPP	28.03	5499.63	NPP
	04/02/14	5527.66	62.61	NPP	27.58	5500.08	NPP
	08/05/13	5527.66	62.61	NPP	27.88	5499.78	NPP
	04/08/13	5527.66	62.61	NPP	27.45	5500.21	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5534.58	34.73	NPP	32.40	5502.18	NPP
	04/16/18	5534.58	34.78	NPP	32.22	5502.36	NPP
	08/22/17	5534.58	34.75	NPP	31.92	5502.66	NPP
	04/18/17	5534.58	35.93	NPP	31.92	5502.66	NPP
	08/16/16	5534.58	35.93	NPP	34.75	5499.83	NPP
	04/15/16	5534.58	35.93	NPP	31.62	5502.96	NPP
10100-08	08/13/15	5534.58	35.93	NPP	31.42	5503.16	NPP
	04/27/15	5534.58	35.93	NPP	31.54	5503.04	NPP
	08/18/14	5534.58	35.93	NPP	31.73	5502.85	NPP
	04/02/14	5534.58	35.93	NPP	32.11	5502.47	NPP
	08/05/13	5534.58	35.93	NPP	31.90	5502.68	NPP
	04/08/13	5534.58	35.93	NPP	31.82	5502.76	NPP
	08/02/18	5510.31	21.80	NPP	12.28	5498.03	NPP
	04/16/18	5510.31	21.81	NPP	12.12	5498.19	NPP
	08/23/17	5510.31	22.32	NPP	12.11	5498.20	NPP
	04/18/17	5510.31	22.94	NPP	11.49	5498.82	NPP
	08/16/16	5510.31	22.94	NPP	11.11	5499.20	NPP
	04/18/16	5510.31	22.94	NPP	11.89	5498.42	NPP
10100-11	08/19/15	5510.31	22.94	NPP	11.25	5499.06	NPP
	04/20/15	5510.31	22.94	NPP	11.30	5499.01	NPP
	08/18/14	5510.31	22.94	NPP	10.95	5499.36	NPP
	04/02/14	5510.31	22.94	NPP	11.85	5498.46	NPP
	08/05/13	5510.31	22.94	NPP	11.82	5498.49	NPP
	04/08/13	5510.31	22.94	NPP	11.91	5498.40	NPP
	08/02/18	5501.61	13.15	NPP	10.30	5491.31	NPP
	04/16/18	5501.61	13.15	NPP	10.65	5490.96	NPP
	08/25/17	5501.61	13.36	NPP	10.29	5491.32	NPP
	04/18/17	5501.61	14.98	NPP	10.04	5491.57	NPP
	08/16/16	5501.61	14.98	NPP	9.49	5492.12	NPP
	04/18/16	5501.61	14.98	NPP	10.02	5500.29	NPP
10100-12	08/19/15	5501.61	14.98	NPP	8.52	5501.79	NPP
	04/20/15	5501.61	14.98	NPP	8.55	5501.76	NPP
	08/18/14	5501.61	14.98	NPP	8.42	5501.89	NPP
	04/02/14	5501.61	14.98	NPP	10.20	5500.11	NPP
	08/05/13	5501.61	14.98	NPP	10.70	5499.61	NPP
	04/08/13	5501.61	14.98	NPP	10.58	5499.73	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/02/18	5542.04	52.89	NPP	40.85	5501.19	NPP
	04/16/18	5542.04	52.90	NPP	40.75	5501.29	NPP
	08/23/17	5542.04	52.85	NPP	40.65	5501.39	NPP
	04/18/17	5542.04	52.89	NPP	40.59	5501.45	NPP
	08/16/16	5542.04	52.89	NPP	40.67	5501.37	NPP
	04/18/16	5542.04	52.89	NPP	40.51	5501.53	NPP
10100-13	08/18/15	5542.04	52.89	NPP	40.53	5501.51	NPP
	04/20/15	5542.04	52.89	NPP	40.68	5501.36	NPP
	08/18/14	5542.04	52.89	NPP	40.94	5501.10	NPP
	04/02/14	5542.04	52.89	NPP	40.90	5501.14	NPP
	08/05/13	5542.04	52.89	NPP	40.85	5501.19	NPP
	04/08/13	5542.04	52.89	NPP	40.80	5501.24	NPP
	08/01/18	5519.90	27.11	20.78	21.32	5499.01	0.54
	04/16/18	5519.90	27.12	20.73	21.13	5499.09	0.40
	08/22/17	5519.90	27.13	20.65	20.94	5499.19	0.29
	04/17/17	5519.90	27.13	20.60	20.87	5499.25	0.27
	08/16/16	5519.90	27.13	20.60	20.64	5499.29	0.04
M\\/_20	04/15/16	5519.90	27.13	20.60	21.20	5499.18	0.60
10100-20	08/13/15	5519.90	27.13	20.60	20.65	5499.29	0.05
	04/27/15	5519.90	27.13	NPP	20.73	5499.17	NPP
	08/18/14	5519.90	27.13	20.90	21.30	5498.92	0.40
	04/02/14	5519.90	27.13	20.77	21.80	5498.92	1.03
	08/05/13	5519.90	27.13	20.69	21.41	5499.07	0.72
	04/08/13	5519.90	27.13	20.81	21.65	5498.92	0.84
	08/01/18	5521.99	30.46	NPP	21.94	5500.05	NPP
	04/16/18	5521.99	30.46	NPP	21.88	5500.11	NPP
	08/22/17	5521.99	30.44	NPP	21.60	5500.39	NPP
	04/18/17	5521.99	30.38	NPP	21.58	5500.41	NPP
	08/15/16	5521.99	30.38	NPP	21.21	5500.78	NPP
M\\/-21	04/15/16	5521.99	30.38	NPP	21.68	5500.31	NPP
10100-21	08/13/15	5521.99	30.38	21.32	21.33	5500.67	0.01
	04/27/15	5521.99	30.38	NPP	21.54	5500.45	NPP
	08/18/14	5521.99	30.38	NPP	21.64	5500.35	NPP
	04/02/14	5521.99	30.38	NPP	22.00	5499.99	NPP
	08/05/13	5521.99	30.38	21.83	21.86	5500.15	0.03
	04/08/13	5521.99	30.38	21.82	21.87	5500.16	0.05

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/02/18	5533.99	41.23	NPP	33.18	5500.81	NPP
	04/16/18	5533.99	41.24	NPP	33.06	5500.93	NPP
	08/23/17	5533.99	41.20	NPP	32.90	5501.09	NPP
	04/18/17	5533.99	41.20	NPP	32.84	5501.15	NPP
	08/16/16	5533.99	41.20	NPP	30.01	5503.98	NPP
	04/18/16	5533.99	41.20	NPP	32.86	5501.13	NPP
10100-25	08/13/15	5533.99	41.20	NPP	32.82	5501.17	NPP
	04/27/15	5533.99	41.20	NPP	33.95	5500.04	NPP
	08/18/14	5533.99	41.20	NPP	33.25	5500.74	NPP
	04/02/14	5533.99	41.20	NPP	33.24	5500.75	NPP
	08/05/13	5533.99	41.20	33.18	33.20	5500.81	0.02
	04/08/13	5533.99	41.20	33.14	33.15	5500.85	0.01
	08/02/18	5517.88	25.12	17.85	17.88	5500.02	0.03
	04/16/18	5517.88	25.12	17.73	17.76	5500.14	0.03
	08/23/17	5517.88	25.11	17.60	17.67	5500.27	0.07
	04/18/17	5517.88	25.11	17.45	17.50	5500.42	0.05
	08/16/16	5517.88	25.11	17.55	17.65	5500.31	0.10
	04/18/16	5517.88	25.11	17.51	17.65	5500.34	0.14
10100-20	08/13/15	5517.88	25.11	17.31	17.55	5500.52	0.24
	04/20/15	5517.88	25.11	17.48	17.72	5500.35	0.24
	08/18/14	5517.88	25.11	17.70	17.95	5500.13	0.25
	04/02/14	5517.88	25.11	17.78	17.82	5500.09	0.04
	08/05/13	5517.88	25.11	17.73	18.01	5500.09	0.28
	04/08/13	5517.88	25.11	17.72	17.83	5500.14	0.11
	08/02/18	5518.67	24.32	NPP	22.41	5496.26	NPP
	04/16/18	5518.67	24.32	NPP	20.88	5497.79	NPP
	08/23/17	5518.67	24.21	NPP	19.73	5498.94	NPP
	04/18/17	5518.67	24.42	NPP	18.87	5499.80	NPP
	08/16/16	5518.67	24.42	NPP	19.10	5499.57	NPP
	04/18/16	5518.67	24.42	NPP	18.91	5499.76	NPP
10100-27	08/18/15	5518.67	24.42	NPP	18.62	5500.05	NPP
	04/20/15	5518.67	24.42	NPP	18.86	5499.81	NPP
	08/18/14	5518.67	24.42	NPP	22.38	5496.29	NPP
	04/02/14	5518.67	24.42	NPP	21.65	5497.02	NPP
	08/05/13	5518.67	24.42	NPP	22.43	5496.24	NPP
	04/08/13	5518.67	24.42	NPP	21.56	5497.11	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5524.97	28.60	NPP	23.66	5501.31	NPP
	04/16/18	5524.97	28.65	NPP	23.45	5501.52	NPP
	08/22/17	5524.97	28.69	NPP	23.11	5501.86	NPP
	04/18/17	5524.97	28.62	NPP	23.23	5501.74	NPP
	08/15/16	5524.97	28.62	NPP	22.68	5502.29	NPP
	04/15/16	5524.97	28.62	NPP	23.04	5501.93	NPP
10100-29	08/24/15	5524.97	28.62	NPP	22.70	5502.27	NPP
	04/27/15	5524.97	28.62	NPP	22.83	5502.14	NPP
	08/18/14	5524.97	28.62	NPP	23.00	5501.97	NPP
	04/02/14	5524.97	28.62	NPP	23.42	5501.55	NPP
	08/05/13	5524.97	28.62	NPP	23.13	5501.84	NPP
	04/08/13	5524.97	28.62	NPP	23.25	5501.72	NPP
	08/01/18	5536.83	40.19	NPP	34.35	5502.48	NPP
	04/16/18	5536.83	40.22	34.29	34.30	5502.54	0.01
	08/22/17	5536.83	40.12	NPP	33.99	5502.84	NPP
	04/18/17	5536.83	40.13	NPP	34.07	5502.76	NPP
	08/15/16	5536.83	40.13	NPP	33.84	5502.99	NPP
M\\/_30	04/15/16	5536.83	40.13	NPP	33.92	5502.91	NPP
10100-30	08/24/15	5536.83	40.13	NPP	33.69	5503.14	NPP
	04/20/15	5536.83	40.13	NPP	33.82	5503.01	NPP
	08/18/14	5536.83	40.13	NPP	34.09	5502.74	NPP
	04/02/14	5536.83	40.13	34.39	34.40	5502.44	0.01
	08/05/13	5536.83	40.13	NPP	34.21	5502.62	NPP
	04/08/13	5536.83	40.13	NPP	34.16	5502.67	NPP
	08/02/18	5536.24	39.19	NPP	34.44	5501.80	NPP
	04/16/18	5536.24	39.18	NPP	34.30	5501.94	NPP
	08/22/17	5536.24	39.16	NPP	34.20	5502.04	NPP
	04/18/17	5536.24	39.16	NPP	34.16	5502.08	NPP
	08/16/16	5536.24	39.16	NPP	34.30	5501.94	NPP
M\\/-31	04/18/16	5536.24	39.16	NPP	34.13	5502.11	NPP
	08/24/15	5536.24	39.16	NPP	34.15	5502.09	NPP
	04/27/15	5536.24	39.16	NPP	34.34	5501.90	NPP
	08/18/14	5536.24	39.16	NPP	34.55	5501.69	NPP
	04/02/14	5536.24	39.16	NPP	34.55	5502.28	NPP
	08/05/13	5536.24	39.16	NPP	34.49	5501.75	NPP
	04/08/13	5536.24	39.16	NPP	34.37	5501.87	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/02/18	5525.64	27.55	NPP	25.54	5500.10	NPP
	04/16/18	5525.64	27.53	NPP	25.45	5500.19	NPP
	08/23/17	5525.64	27.54	NPP	25.30	5500.34	NPP
	04/18/17	5525.64	27.51	NPP	25.31	5500.33	NPP
	08/16/16	5525.64	27.51	NPP	25.37	5500.27	NPP
	04/18/16	5525.64	27.51	NPP	25.25	5500.39	NPP
10100-32	08/08/15	5525.64	27.51	NPP	25.18	5500.46	NPP
	04/20/15	5525.64	27.51	NPP	25.30	5500.34	NPP
	08/18/14	5525.64	27.51	NPP	25.52	5500.12	NPP
	04/02/14	5525.64	27.51	NPP	25.55	5500.09	NPP
	08/05/13	5525.64	27.51	NPP	25.47	5500.17	NPP
	04/08/13	5525.64	27.51	NPP	25.45	5500.19	NPP
	08/02/18	5521.79	25.51	NPP	24.38	5497.41	NPP
	04/16/18	5521.79	25.51	NPP	22.78	5499.01	NPP
	08/23/17	5521.79	25.50	NPP	22.56	5499.23	NPP
	04/18/17	5521.79	25.51	NPP	22.50	5499.29	NPP
	08/16/16	5521.79	25.51	NPP	22.78	5499.01	NPP
MM 22	04/18/16	5521.79	25.51	NPP	22.54	5499.25	NPP
10100-33	08/18/15	5521.79	25.51	NPP	22.39	5499.40	NPP
	04/20/15	5521.79	25.51	NPP	22.35	5499.44	NPP
	08/18/14	5521.79	25.51	NPP	23.26	5498.53	NPP
	04/02/14	5521.79	25.51	NPP	23.45	5498.34	NPP
	08/05/13	5521.79	25.51	NPP	23.86	5497.93	NPP
	04/08/13	5521.79	25.51	NPP	23.56	5498.23	NPP
	08/02/18	5511.63	20.96	NPP	14.95	5496.68	NPP
	04/16/18	5511.63	20.96	NPP	14.87	5496.76	NPP
	08/23/17	5511.63	20.97	NPP	14.55	5497.08	NPP
	04/18/17	5511.63	20.96	NPP	14.55	5497.08	NPP
	08/16/16	5511.63	20.96	NPP	14.05	5497.58	NPP
M\\/_3/	04/18/16	5511.63	20.96	NPP	14.57	5497.06	NPP
IVIVV-34	08/19/15	5511.63	20.96	NPP	13.90	5497.73	NPP
	04/20/15	5511.63	20.96	NPP	13.83	5497.80	NPP
	08/18/14	5511.63	20.96	NPP	14.01	5497.62	NPP
	04/02/14	5511.63	20.96	NPP	14.77	5496.86	NPP
	08/05/13	5511.63	20.96	NPP	14.63	5497.00	NPP
	04/08/13	5511.63	20.96	NPP	14.70	5496.93	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/02/18	5518.95	25.92	NPP	22.72	5496.23	NPP
	04/16/18	5518.95	25.65	NPP	22.68	5496.27	NPP
	08/23/17	5518.95	25.62	NPP	22.32	5496.63	NPP
	04/18/17	5518.95	26.45	NPP	22.45	5496.50	NPP
	08/16/16	5518.95	26.45	NPP	22.04	5496.91	NPP
	04/18/16	5518.95	26.45	NPP	22.44	5496.51	NPP
10100-30	08/19/15	5518.95	26.45	NPP	21.83	5497.12	NPP
	04/20/15	5518.95	26.45	NPP	22.85	5496.10	NPP
	08/18/14	5518.95	26.45	NPP	22.34	5496.61	NPP
	04/02/14	5518.95	26.45	NPP	22.69	5496.26	NPP
	08/05/13	5518.95	26.45	NPP	22.54	5496.41	NPP
	04/08/13	5518.95	26.45	NPP	22.57	5496.38	NPP
	08/02/18	5516.95	23.06	NPP	21.01	5495.94	NPP
	04/16/18	5516.95	23.08	NPP	21.16	5495.79	NPP
	08/23/17	5516.95	23.06	NPP	20.77	5496.18	NPP
	04/18/17	5516.95	23.26	NPP	20.86	5496.09	NPP
	08/16/16	5516.95	23.26	NPP	20.18	5496.77	NPP
M\\/_36	04/18/16	5516.95	23.26	NPP	20.95	5496.00	NPP
10100-30	08/13/15	5516.95	23.26	NPP	20.16	5496.79	NPP
	04/27/15	5516.95	23.26	NPP	19.87	5497.08	NPP
	08/18/14	5516.95	23.26	NPP	19.64	5497.31	NPP
	04/02/14	5516.95	23.26	NPP	21.12	5495.83	NPP
	08/05/13	5516.95	23.26	NPP	20.98	5495.97	NPP
	04/08/13	5516.95	23.26	NPP	21.10	5495.85	NPP
	08/02/18	5519.62	27.37	NPP	23.77	5495.85	NPP
	04/16/18	5519.62	27.39	NPP	23.80	5495.82	NPP
	08/23/17	5519.62	27.35	NPP	23.44	5496.18	NPP
	04/18/17	5519.62	27.58	NPP	23.60	5496.02	NPP
	08/16/16	5519.62	27.58	NPP	23.21	5496.41	NPP
M\\/_37	04/18/16	5519.62	27.58	NPP	23.66	5495.96	NPP
10100 07	08/19/15	5519.62	27.58	NPP	23.06	5496.56	NPP
	04/20/15	5519.62	27.58	NPP	23.13	5496.49	NPP
	08/18/14	5519.62	27.58	NPP	22.98	5496.64	NPP
	04/02/14	5519.62	27.58	NPP	23.72	5495.90	NPP
	08/05/13	5519.62	27.58	NPP	23.69	5495.93	NPP
	04/08/13	5519.62	27.58	NPP	23.72	5495.90	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/02/18	5519.19	26.84	NPP	23.90	5495.29	NPP
	04/16/18	5519.19	26.84	NPP	23.89	5495.30	NPP
	08/22/17	5519.19	26.82	NPP	23.57	5495.62	NPP
	04/18/17	5519.19	26.82	NPP	23.59	5495.60	NPP
	08/16/16	5519.19	26.82	NPP	23.13	5496.06	NPP
	04/18/16	5519.19	26.82	NPP	23.64	5495.55	NPP
10100-38	08/19/15	5519.19	26.82	NPP	23.19	5496.00	NPP
	04/20/15	5519.19	26.82	NPP	23.08	5496.11	NPP
	08/18/14	5519.19	26.82	NPP	22.45	5496.74	NPP
	04/02/14	5519.19	26.82	NPP	23.83	5495.36	NPP
	08/05/13	5519.19	26.82	NPP	23.91	5495.28	NPP
	04/08/13	5519.19	26.82	NPP	23.87	5495.32	NPP
	08/01/18	5520.83	38.34	NPP	25.70	5495.13	NPP
	04/16/18	5520.83	38.34	NPP	25.50	5495.33	NPP
	08/22/17	5520.83	38.31	NPP	25.73	5495.10	NPP
	04/17/17	5520.83	38.34	NPP	25.53	5495.30	NPP
	08/16/16	5520.83	38.34	NPP	25.80	5495.03	NPP
MW 20	04/15/16	5520.83	38.34	NPP	25.60	5495.23	NPP
10100-39	08/13/15	5520.83	38.34	NPP	25.78	5495.05	NPP
	04/27/15	5520.83	38.34	NPP	25.75	5495.08	NPP
	08/18/14	5520.83	38.34	NPP	25.94	5494.89	NPP
	04/02/14	5520.83	38.34	NPP	25.70	5495.13	NPP
	08/05/13	5520.83	38.34	NPP	25.95	5494.88	NPP
	04/08/13	5520.83	38.34	NPP	25.70	5495.13	NPP
	08/01/18	5527.31	29.62	NPP	28.33	5498.98	NPP
	04/16/18	5527.31	29.61	NPP	27.92	5499.39	NPP
	08/22/17	5527.31	30.07	NPP	27.94	5499.37	NPP
	04/17/17	5527.31	30.07	NPP	27.86	5499.45	NPP
	08/16/16	5527.31	30.07	NPP	28.14	5499.17	NPP
MW_40	04/15/16	5527.31	30.07	NPP	28.25	5499.06	NPP
10100-40	08/13/15	5527.31	30.07	28.08	28.09	5499.23	0.01
	04/27/15	5527.31	30.07	NPP	28.08	5499.23	NPP
	08/18/14	5527.31	30.07	28.59	28.65	5498.71	0.06
	04/02/14	5527.31	30.07	28.55	29.10	5498.65	0.55
	08/05/13	5527.31	30.07	28.42	28.81	5498.81	0.39
	04/08/13	5527.31	30.07	28.48	28.77	5498.77	0.29

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5526.41	31.25	26.85	26.95	5499.54	0.10
	04/16/18	5526.41	31.25	26.51	26.58	5499.89	0.07
	08/22/17	5526.41	31.62	26.38	26.49	5500.01	0.11
	04/17/17	5526.41	31.62	NPP	26.21	5500.20	NPP
	08/16/16	5526.41	31.62	NPP	28.14	5498.27	NPP
	04/15/16	5526.41	31.62	26.55	26.66	5499.84	0.11
10100-41	08/13/15	5526.41	31.62	26.43	26.67	5499.93	0.24
	04/27/15	5526.41	31.62	26.59	26.80	5499.78	0.21
	08/18/14	5526.41	31.62	26.96	27.70	5499.30	0.74
	04/02/14	5526.41	31.62	26.96	27.99	5499.24	1.03
	08/05/13	5526.41	31.62	26.83	27.75	5499.40	0.92
	04/08/13	5526.41	31.62	26.85	27.78	5499.37	0.93
	08/01/18	5535.44	50.96	NPP	34.35	5501.09	NPP
	04/16/18	5535.44	50.98	NPP	34.10	5501.34	NPP
	08/22/17	5535.44	50.91	NPP	34.18	5501.26	NPP
	04/18/17	5535.44	50.91	NPP	34.05	5501.39	NPP
	08/16/16	5535.44	50.91	NPP	34.32	5501.12	NPP
N/N/_//	04/15/16	5535.44	50.91	NPP	33.98	5501.46	NPP
10100-44	08/24/15	5535.44	50.91	NPP	34.30	5501.14	NPP
	04/27/15	5535.44	50.91	NPP	34.98	5500.46	NPP
	08/18/14	5535.44	50.91	NPP	34.57	5500.87	NPP
	04/02/14	5535.44	50.91	NPP	34.30	5501.14	NPP
	08/05/13	5535.44	50.91	NPP	34.46	5500.98	NPP
	04/08/13	5535.44	50.91	NPP	34.04	5501.40	NPP
	08/01/18	5506.36	16.71	11.95	11.96	5494.41	0.01
	04/17/18	5506.36	16.71	NPP	11.96	5494.40	NPP
	08/22/17	5506.36	16.74	NPP	11.83	5494.53	NPP
	04/17/17	5506.36	16.92	NPP	11.81	5494.55	NPP
	08/16/16	5506.36	16.92	NPP	11.78	5494.58	NPP
MW-45	04/15/16	5506.36	16.92	NPP	11.88	5494.48	NPP
	08/13/15	5506.36	16.92	NPP	11.85	5494.51	NPP
	04/27/15	5506.36	16.92	NPP	11.95	5494.41	NPP
	08/18/14	5506.36	16.92	NPP	11.85	5494.51	NPP
	04/02/14	5506.36	16.92	12.07	12.15	5494.27	0.08
	08/05/13	5506.36	16.92	11.88	11.89	5494.48	0.01
	04/08/13	5506.36	16.92	11.98	12.05	5494.37	0.07

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5504.65	10.10	NPP	NWP	NWP	NPP
	04/17/18	5504.65	10.10	NPP	10.10	5494.55	NPP
	08/24/17	5504.65	10.09	NPP	10.08	5494.57	NPP
	04/17/17	5504.65	10.39	NPP	NWP	NWP	NPP
	08/15/16	5504.65	10.39	NPP	NWP	NWP	NPP
	04/15/16	5504.65	10.39	NPP	10.03	5494.62	NPP
10100-40	08/13/15	5504.65	10.39	NPP	9.94	5494.71	NPP
	04/27/15	5504.65	10.39	NPP	9.94	5494.71	NPP
	08/18/14	5504.65	10.39	NPP	NWP	NWP	NPP
	04/02/14	5504.65	10.39	NPP	NWP	NWP	NPP
	08/05/13	5504.65	10.39	NPP	NWP	NWP	NPP
	04/08/13	5504.65	10.39	NPP	NWP	NWP	NPP
	08/01/18	5506.77	14.11	NPP	13.30	5493.47	NPP
	04/17/18	5506.77	14.12	NPP	13.17	5493.60	NPP
	08/23/17	5506.77	14.11	NPP	12.96	5493.81	NPP
	04/17/17	5506.77	14.28	NPP	12.60	5494.17	NPP
	08/15/16	5506.77	14.28	NPP	12.14	5494.63	NPP
	04/15/16	5506.77	14.28	NPP	12.55	5494.22	NPP
10100-47	08/13/15	5506.77	14.28	NPP	11.82	5494.95	NPP
	04/21/15	5506.77	14.28	NPP	12.23	5494.54	NPP
	08/18/14	5506.77	14.28	NPP	13.30	5493.47	NPP
	04/02/14	5506.77	14.28	NPP	13.80	5492.97	NPP
	08/05/13	5506.77	14.28	NPP	12.97	5493.80	NPP
	04/08/13	5506.77	14.28	NPP	12.84	5493.93	NPP
	08/01/18	5518.79	22.11	NPP	18.02	5500.77	NPP
	04/16/18	5518.79	22.07	NPP	17.30	5501.49	NPP
	08/22/17	5518.79	22.07	NPP	17.04	5501.75	NPP
	04/18/17	5518.79	20.00	NPP	17.42	5501.37	NPP
	08/15/16	5518.79	20.00	NPP	16.50	5502.29	NPP
	04/15/16	5518.79	20.00	NPP	16.87	5501.92	NPP
MW-50	08/13/15	5518.79	20.00	NPP	16.62	5502.17	NPP
IVIVV-50	04/27/15	5518.79	20.00	NPP	16.67	5502.12	NPP
	08/18/14	5518.79	20.00	NPP	16.78	5502.01	NPP
	04/02/14	5518.79	20.00	NPP	17.28	5501.51	NPP
	08/05/13	5518.79	20.00	NPP	16.76	5502.03	NPP
	04/08/13	5518.79	20.00	NPP	17.21	5501.58	NPP
	08/06/12	5518.79	20.00	NPP	16.88	5501.91	NPP
	04/02/12	5518.79	20.00	NPP	17.22	5501.57	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5515.58	22.13	NPP	15.31	5500.27	NPP
	04/16/18	5515.58	22.14	NPP	15.00	5500.58	NPP
	08/22/17	5515.58	22.11	NPP	14.01	5501.57	NPP
	04/18/17	5515.58	20.00	NPP	14.93	5500.65	NPP
	08/15/16	5515.58	20.00	NPP	14.18	5501.40	NPP
	04/15/16	5515.58	20.00	NPP	14.79	5500.79	NPP
	08/13/15	5515.58	20.00	NPP	14.37	5501.21	NPP
	04/27/15	5515.58	20.00	NPP	14.52	5501.06	NPP
	08/18/14	5515.58	20.00	NPP	14.48	5501.10	NPP
	04/02/14	5515.58	20.00	NPP	14.98	5500.60	NPP
	08/05/13	5515.58	20.00	NPP	14.54	5501.04	NPP
	04/08/13	5515.58	20.00	NPP	14.95	5500.63	NPP
	08/01/18	5538.63	41.72	NPP	36.92	5501.71	NPP
	04/16/18	5538.63	41.71	NPP	36.78	5501.85	NPP
	08/22/17	5538.63	41.68	NPP	36.45	5502.18	NPP
	04/18/17	5538.63	41.00	NPP	36.49	5502.14	NPP
	08/16/16	5538.63	41.00	NPP	36.17	5502.46	NPP
	04/15/16	5538.63	41.00	NPP	36.19	5502.44	NPP
10100-52	08/13/15	5538.63	41.00	NPP	36.00	5502.63	NPP
	04/20/15	5538.63	41.00	NPP	36.05	5502.58	NPP
	08/18/14	5538.63	41.00	NPP	36.31	5502.32	NPP
	04/02/14	5538.63	41.00	NPP	36.69	5501.94	NPP
	08/05/13	5538.63	41.00	NPP	36.47	5502.16	NPP
	04/08/13	5538.63	41.00	NPP	36.41	5502.22	NPP
	08/01/18	5541.32	43.55	NPP	39.40	5501.92	NPP
	04/16/18	5541.32	43.55	NPP	39.29	5502.03	NPP
	08/22/17	5541.32	43.50	NPP	39.03	5502.29	NPP
	04/18/17	5541.32	41.50	NPP	38.99	5502.33	NPP
	08/16/16	5541.32	41.50	NPP	38.90	5502.42	NPP
MW-53	04/15/16	5541.32	41.50	NPP	38.85	5502.47	NPP
10100 00	08/13/15	5541.32	41.50	NPP	38.68	5502.64	NPP
	04/27/15	5541.32	41.50	NPP	38.80	5502.52	NPP
	08/18/14	5541.32	41.50	NPP	39.05	5502.27	NPP
	04/02/14	5541.32	41.50	NPP	39.32	5502.00	NPP
	08/05/13	5541.32	41.50	NPP	39.16	5502.16	NPP
	04/08/13	5541.32	41.50	NPP	39.04	5502.28	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5530.08	41.28	NPP	32.26	5497.82	NPP
	04/16/18	5530.08	41.24	NPP	31.83	5498.25	NPP
	08/22/17	5530.08	41.20	NPP	31.98	5498.10	NPP
	04/17/17	5530.08	38.00	NPP	31.73	5498.35	NPP
	08/16/16	5530.08	38.00	31.87	31.88	5498.21	0.01
	04/15/16	5530.08	38.00	32.46	32.52	5497.61	0.06
10100-54	08/13/15	5530.08	38.00	32.40	32.45	5497.67	0.05
	04/27/15	5530.08	38.00	32.02	32.05	5498.05	0.03
	08/18/14	5530.08	38.00	32.38	32.52	5497.67	0.14
	04/02/14	5530.08	38.00	32.75	32.95	5497.29	0.20
	08/05/13	5530.08	38.00	32.45	32.64	5497.59	0.19
	04/08/13	5530.08	38.00	32.71	32.93	5497.33	0.22
	08/01/18	5519.84	26.19	NPP	21.80	5498.04	NPP
	04/16/18	5519.84	26.18	NPP	21.75	5498.09	NPP
	08/22/17	5519.84	24.18	NPP	21.61	5498.23	NPP
	04/17/17	5519.84	27.25	NPP	21.63	5498.21	NPP
	08/15/16	5519.84	27.25	NPP	21.74	5498.10	NPP
	04/15/16	5519.84	27.25	NPP	21.71	5498.13	NPP
10100-00	08/13/15	5519.84	27.25	22.08	22.09	5497.76	0.01
	04/27/15	5519.84	27.25	21.85	21.88	5497.98	0.03
	08/18/14	5519.84	27.25	21.84	21.86	5498.00	0.02
	04/02/14	5519.84	27.25	21.95	22.01	5497.88	0.06
	08/05/13	5519.84	27.25	21.74	22.58	5497.93	0.84
	04/08/13	5519.84	27.25	21.05	21.95	5498.61	0.90
	08/01/18	5519.31	23.76	18.33	18.42	5500.96	0.09
	04/16/18	5519.31	23.76	NPP	18.25	5501.06	NPP
	08/22/17	5519.31	23.75	NPP	18.05	5501.26	NPP
	04/17/17	5519.31	23.75	NPP	17.88	5501.43	NPP
	08/15/16	5519.31	23.75	NPP	17.85	5501.46	NPP
MW-56	04/15/16	5519.31	23.75	NPP	18.03	5501.28	NPP
10100-30	08/13/15	5519.31	23.75	17.86	17.87	5501.45	0.01
	04/27/15	5519.31	23.75	18.04	18.05	5501.27	0.01
	08/18/14	5519.31	23.75	18.10	18.25	5501.18	0.15
	04/02/14	5519.31	23.75	18.26	19.10	5500.88	0.84
	08/05/13	5519.31	23.75	18.11	18.87	5501.05	0.76
	04/08/13	5519.31	23.75	18.25	19.33	5500.84	1.08

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5521.17	23.95	19.74	19.76	5501.43	0.02
	04/16/18	5521.17	23.95	19.65	19.66	5501.52	0.01
	08/22/17	5521.17	24.25	19.43	19.44	5501.74	0.01
	04/17/17	5521.17	24.25	NPP	19.37	5501.80	NPP
	08/15/16	5521.17	24.25	NPP	19.29	5501.88	NPP
	04/15/16	5521.17	24.25	NPP	19.46	5501.71	NPP
10100-57	08/13/15	5521.17	24.25	19.42	19.43	5501.75	0.01
	04/27/15	5521.17	24.25	19.42	19.43	5501.75	0.01
	08/18/14	5521.17	24.25	19.60	19.75	5501.54	0.15
	04/02/14	5521.17	24.25	19.78	20.36	5501.27	0.58
	08/05/13	5521.17	24.25	19.60	20.30	5501.43	0.70
	04/08/13	5521.17	24.25	19.66	20.35	5501.37	0.69
	08/01/18	5520.29	27.35	NPP	21.15	5499.14	NPP
	04/16/18	5520.29	27.35	NPP	21.03	5499.26	NPP
	08/22/17	5520.29	27.00	20.83	20.84	5499.46	0.01
	04/17/17	5520.29	27.00	NPP	20.78	5499.51	NPP
	08/15/16	5520.29	27.00	20.9	20.93	5499.38	0.03
	04/15/16	5520.29	27.00	20.9	21.06	5499.36	0.16
10100-30	08/13/15	5520.29	27.00	20.8	20.83	5499.48	0.03
	04/27/15	5520.29	27.00	20.97	21.75	5499.16	0.78
	08/18/14	5520.29	27.00	21.08	21.87	5499.05	0.79
	04/02/14	5520.29	27.00	21.25	22.90	5498.71	1.65
	08/05/13	5520.29	27.00	21.10	22.17	5498.98	1.07
	04/08/13	5520.29	27.00	21.25	22.35	5498.82	1.10
	08/02/18	5545.20	46.88	NPP	43.62	5501.58	NPP
	04/16/18	5545.20	46.88	NPP	43.49	5501.71	NPP
	08/22/17	5545.20	46.85	NPP	43.43	5501.77	NPP
	04/18/17	5545.20	44.25	NPP	43.37	5501.83	NPP
	08/16/16	5545.20	44.25	NPP	43.52	5501.68	NPP
M\\/_59	04/18/16	5545.20	44.25	NPP	43.36	5501.84	NPP
10107-33	08/13/15	5545.20	44.25	NPP	43.42	5501.78	NPP
	04/27/15	5545.20	44.25	NPP	43.55	5501.65	NPP
	08/18/14	5545.20	44.25	NPP	43.75	5501.45	NPP
	04/02/14	5545.20	44.25	NPP	43.73	5501.47	NPP
	08/05/13	5545.20	44.25	NPP	43.67	5501.53	NPP
	04/08/13	5545.20	44.25	NPP	43.56	5501.64	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/02/18	5543.71	43.38	NPP	42.88	5500.83	NPP
	04/16/18	5543.71	43.38	NPP	42.74	5500.97	NPP
	08/22/17	5543.71	43.36	NPP	42.65	5501.06	NPP
	04/18/17	5543.71	43.33	NPP	42.58	5501.13	NPP
	08/16/16	5543.71	43.33	NPP	42.72	5500.99	NPP
	04/18/16	5543.71	43.33	NPP	42.55	5501.16	NPP
10100-00	08/13/15	5543.71	43.33	NPP	42.62	5501.09	NPP
	04/27/15	5543.71	43.33	NPP	42.76	5500.95	NPP
	08/18/14	5543.71	43.33	NPP	43.15	5500.56	NPP
	04/02/14	5543.71	43.33	NPP	43.20	5500.51	NPP
	08/05/13	5543.71	43.33	NPP	42.90	5500.81	NPP
	04/08/13	5543.71	43.33	NPP	42.85	5500.86	NPP
	08/02/18	5539.41	40.50	36.93	37.23	5502.42	0.30
	04/17/18	5539.41	40.50	36.80	37.04	5502.56	0.24
	08/22/17	5539.41	40.45	36.60	36.81	5502.77	0.21
	04/18/17	5539.41	40.25	36.59	36.80	5502.78	0.21
	08/16/16	5539.41	40.25	36.60	36.93	5502.74	0.33
	04/18/16	5539.41	40.25	36.60	36.86	5502.76	0.26
10100-01	08/13/15	5539.41	40.25	36.38	36.70	5502.97	0.32
	04/27/15	5539.41	40.25	36.60	36.96	5502.74	0.36
	08/18/14	5539.41	40.25	36.80	37.40	5502.49	0.60
	04/02/14	5539.41	40.25	36.88	37.86	5502.33	0.98
	08/05/13	5539.41	40.25	36.80	37.70	5502.43	0.90
	04/08/13	5539.41	40.25	36.71	37.40	5502.56	0.69
	08/02/18	5561.32	61.29	NPP	56.65	5504.67	NPP
	04/16/18	5561.32	61.24	NPP	56.52	5504.80	NPP
	08/22/17	5561.32	61.25	NPP	56.71	5504.61	NPP
	04/18/17	5561.32	58.25	NPP	56.53	5504.79	NPP
	08/16/16	5561.32	58.25	NPP	56.51	5504.81	NPP
MW-62	04/18/16	5561.32	58.25	NPP	56.57	5504.75	NPP
10100-02	08/13/15	5561.32	58.25	NPP	56.59	5504.73	NPP
	04/27/15	5561.32	58.25	NPP	56.33	5504.99	NPP
	08/18/14	5561.32	58.25	NPP	56.28	5505.04	NPP
	04/02/14	5561.32	58.25	NPP	56.05	5505.27	NPP
	08/05/13	5561.32	58.25	NPP	56.36	5504.96	NPP
	04/08/13	5561.32	58.25	NPP	55.93	5505.39	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/02/18	5547.26	47.83	NPP	45.17	5502.09	NPP
	04/16/18	5547.26	47.79	NPP	45.02	5502.24	NPP
	08/22/17	5547.26	47.81	NPP	44.92	5502.34	NPP
	04/18/17	5547.26	46.00	NPP	44.87	5502.39	NPP
	08/16/16	5547.26	46.00	NPP	40.01	5507.25	NPP
	04/18/16	5547.26	46.00	NPP	44.87	5502.39	NPP
10100-03	08/13/15	5547.26	46.00	NPP	44.84	5502.42	NPP
	04/27/15	5547.26	46.00	NPP	45.03	5502.23	NPP
	08/18/14	5547.26	46.00	NPP	45.23	5502.03	NPP
	04/02/14	5547.26	46.00	NPP	45.27	5501.99	NPP
	08/05/13	5547.26	46.00	NPP	45.20	5502.06	NPP
	04/08/13	5547.26	46.00	NPP	45.09	5502.17	NPP
	08/02/18	5547.26	52.36	NPP	50.38	5496.88	NPP
	04/16/18	5547.26	52.35	NPP	50.25	5497.01	NPP
	08/22/17	5547.26	52.32	NPP	50.19	5497.07	NPP
	04/18/17	5547.26	52.25	NPP	44.87	5502.39	NPP
	08/16/16	5552.29	52.25	NPP	50.26	5502.03	NPP
	04/18/16	5552.29	52.25	NPP	50.11	5502.18	NPP
10100-04	08/13/15	5552.29	52.25	NPP	50.17	5502.12	NPP
	04/27/15	5552.29	52.25	NPP	50.27	5502.02	NPP
	08/18/14	5552.29	52.25	NPP	50.46	5501.83	NPP
	04/02/14	5552.29	52.25	NPP	50.45	5501.84	NPP
	08/05/13	5552.29	52.25	NPP	50.37	5501.92	NPP
	04/08/13	5552.29	52.25	NPP	50.32	5501.97	NPP
	08/02/18	5539.62	44.21	NPP	37.35	5502.27	NPP
	04/17/18	5539.62	44.21	NPP	37.22	5502.40	NPP
	08/22/17	5539.62	44.22	NPP	37.03	5502.59	NPP
	04/18/17	5539.62	44.25	NPP	36.98	5502.64	NPP
	08/16/16	5539.62	44.25	NPP	36.93	5502.69	NPP
MW-65	04/18/16	5539.62	44.25	NPP	36.94	5502.68	NPP
10107-00	08/13/15	5539.62	44.25	NPP	36.70	5502.92	NPP
	04/27/15	5539.62	44.25	NPP	37.50	5502.12	NPP
	08/18/14	5539.62	44.25	NPP	37.15	5502.47	NPP
	04/02/14	5539.62	44.25	NPP	37.38	5502.24	NPP
	08/05/13	5539.62	44.25	NPP	37.24	5502.38	NPP
	04/08/13	5539.62	44.25	NPP	37.13	5502.49	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/02/18	5544.62	45.48	42.10	42.17	5502.51	0.07
	04/16/18	5544.62	45.48	41.97	42.01	5502.64	0.04
	08/22/17	5544.62	45.49	41.81	41.82	5502.81	0.01
	04/18/17	5544.62	43.25	NPP	41.77	5502.85	NPP
	08/16/16	5544.62	43.25	41.82	41.83	5502.80	0.01
	04/18/16	5544.62	43.25	NPP	41.75	5502.87	NPP
10100-00	08/13/15	5544.62	43.25	41.57	41.58	5503.05	0.01
	04/27/15	5544.62	43.25	NPP	41.81	5502.81	NPP
	08/18/14	5544.62	43.25	42.01	42.13	5502.59	0.12
	04/02/14	5544.62	43.25	42.13	42.45	5502.43	0.32
	08/05/13	5544.62	43.25	42.01	42.28	5502.56	0.27
	04/08/13	5544.62	43.25	42.04	42.20	5502.55	0.16
	08/01/18	5523.31	26.23	NPP	22.08	5501.23	NPP
	04/16/18	5523.31	26.22	NPP	21.60	5501.71	NPP
	08/22/17	5523.31	26.18	NPP	21.37	5501.94	NPP
	04/18/17	5523.31	25.14	NPP	21.53	5501.78	NPP
	08/16/16	5523.31	25.14	NPP	20.94	5502.37	NPP
	04/15/16	5523.31	25.14	NPP	21.25	5502.06	NPP
10100-07	08/13/15	5523.31	25.14	NPP	21.02	5502.29	NPP
	04/27/15	5523.31	25.14	NPP	21.10	5502.21	NPP
	08/18/14	5523.31	25.14	NPP	21.42	5501.89	NPP
	04/02/14	5523.31	25.14	NPP	21.54	5501.77	NPP
	08/05/13	5523.31	25.14	NPP	21.24	5502.07	NPP
	04/08/13	5523.31	25.14	NPP	21.47	5501.84	NPP
	08/01/18	5517.37	21.10	NPP	17.33	5500.04	NPP
	04/16/18	5517.37	21.10	NPP	17.13	5500.24	NPP
	08/22/17	5517.37	21.10	NPP	16.72	5500.65	NPP
	04/18/17	5517.37	20.58	NPP	16.91	5500.46	NPP
	08/15/16	5517.37	20.58	NPP	16.20	5501.17	NPP
MW-68	04/15/16	5517.37	20.58	NPP	16.66	5500.71	NPP
IVIVV-68	08/13/15	5517.37	20.58	NPP	16.23	5501.14	NPP
	04/27/15	5517.37	20.58	NPP	16.40	5500.97	NPP
	08/18/14	5517.37	20.58	NPP	16.50	5500.87	NPP
	04/02/14	5517.37	20.58	NPP	16.94	5500.43	NPP
	08/05/13	5517.37	20.58	NPP	16.57	5500.80	NPP
	04/08/13	5517.37	20.58	NPP	16.84	5500.53	NPP

		Measuring	Total Well	Depth To	Depth To	Corrected Groundwater	SPH
Well ID	Date	Flevation	Depth	Product	Water	Flevation	Thickness
		(ft amsl)	(ft below TOC)	(ft below TOC)	(ft below TOC)	(ft amsl)	(ft)
	08/18/18	5508.51	12.01	NPP	11.95	5496.56	NPP
	04/17/18	5508.51	12.01	NPP	11.94	5496.57	NPP
	08/22/17	5508.51	NM	NM	NM	NM	NM
	04/17/17	5508.51	12.08	NPP	11.90	5496.61	NPP
	08/15/16	5508.51	12.08	NPP	11.89	5496.62	NPP
M\\/_60	04/15/16	5508.51	12.08	NPP	11.89	5496.62	NPP
10100-03	08/13/15	5508.51	12.08	NPP	NWP	NWP	NPP
	04/27/15	5508.51	12.08	NPP	11.81	5496.70	NPP
	08/18/14	5508.51	12.08	NPP	11.96	5496.55	NPP
	04/02/14	5508.51	12.08	NPP	11.96	5496.55	NPP
	08/05/13	5508.51	12.08	NPP	11.90	5496.61	NPP
	04/08/13	5508.51	12.08	NPP	11.91	5496.60	NPP
	08/01/18	5527.96	28.94	NPP	26.36	5501.60	NPP
	04/16/18	5527.96	28.93	NPP	26.16	5501.80	NPP
	08/22/17	5527.96	28.89	NPP	25.83	5502.13	NPP
	04/18/17	5527.96	26.25	NPP	25.99	5501.97	NPP
	08/15/16	5508.51	26.25	NPP	25.43	5483.08	NPP
MW-70	04/15/16	5508.51	26.25	NPP	25.63	5482.88	NPP
	08/13/15	5527.96	26.25	NPP	25.29	5502.67	NPP
	04/27/15	5527.96	26.25	NPP	25.46	5502.50	NPP
	08/18/14	5527.96	26.25	NPP	25.56	5502.40	NPP
	04/02/14	5527.96	26.25	NPP	26.05	5501.91	NPP
	08/05/13	5527.96	26.25	NPP	25.85	5502.11	NPP
	08/01/18	5529.08	37.98	30.20	30.24	5498.87	0.04
	04/16/18	5529.08	37.98	29.96	29.97	5499.12	0.01
	08/22/17	5529.08	37.96	NPP	29.85	5499.23	NPP
M\\\/_71	04/17/17	5529.08	38.95	NPP	29.91	5499.17	NPP
	08/16/16	5529.08	38.95	30.14	30.26	5498.92	0.12
	04/15/16	5529.08	38.95	30.12	30.16	5498.95	0.04
	08/13/15	5529.08	38.95	30.05	30.15	5499.01	0.10
	04/28/15	5529.08	38.95	30.22	30.35	5498.83	0.13
	08/01/18	5528.54	34.94	28.78	29.98	5499.52	1.20
	04/16/18	5528.54	34.95	28.55	28.71	5499.96	0.16
	08/22/17	5528.54	34.91	28.33	28.37	5500.20	0.04
M\\\/_72	04/17/17	5528.54	34.94	28.30	28.48	5500.20	0.18
	08/16/16	5528.54	34.94	28.51	28.90	5499.95	0.39
	04/15/16	5528.54	34.94	NPP	28.93	5499.61	NPP
	08/13/15	5528.54	34.94	NPP	28.66	5499.88	NPP
	04/28/15	5528.54	34.94	NPP	28.66	5499.88	NPP

		Measuring	Total Well	Depth To	Depth To	Corrected	SPH
Well ID	Date	Point	Depth	Product	Water	Groundwater	Thickness
		(ft ams/)	(ft below TOC)	(ft below TOC)	(ft below TOC)	(ft ams)	(ft)
	08/01/18	5528.92	36.79	NPP	29.77	5499.15	NPP
	04/16/18	5528.92	36.78	NPP	29.53	5499.39	NPP
	08/22/17	5528.92	36.76	NPP	29.39	5499.53	NPP
	04/17/17	5528.92	36.66	NPP	29.33	5499.59	NPP
MW-73	08/16/16	5528.92	36.66	NPP	29.71	5499.21	NPP
	04/15/16	5528.92	36.66	NPP	29.58	5499.34	NPP
	08/13/15	5528.92	36.66	NPP	29.61	5499.31	NPP
	04/28/15	5528.92	36.66	NPP	29.80	5499.12	NPP
	08/01/18	5528.92	33.93	NPP	29.09	5499.83	NPP
	04/16/18	5528.92	33.94	NPP	28.87	5500.05	NPP
	08/22/17	5528.92	33.91	NPP	28.75	5500.17	NPP
	04/17/17	5528.92	33.91	NPP	28.63	5500.29	NPP
10100-74	08/16/16	5528.92	33.91	NPP	28.95	5499.97	NPP
	04/15/16	5528.92	33.91	NPP	28.87	5500.05	NPP
	08/13/15	5528.92	33.91	NPP	28.79	5500.13	NPP
	04/28/15	5528.55	33.91	29.00	29.04	5499.54	0.04
	08/01/18	5528.76	32.18	NPP	28.66	5500.10	NPP
	04/16/18	5528.76	32.18	NPP	28.46	5500.30	NPP
	08/23/17	5528.76	32.25	NPP	28.21	5500.55	NPP
M\\/_75	04/17/17	5528.76	32.25	NPP	28.13	5500.63	NPP
10100-75	08/15/16	5528.76	32.25	NPP	28.37	5500.39	NPP
	04/15/16	5528.76	32.25	NPP	28.35	5500.41	NPP
	08/13/15	5528.76	32.25	28.15	28.16	5500.61	0.01
	04/28/15	5528.76	32.25	28.40	28.41	5500.36	0.01
	08/01/18	5528.61	34.10	NPP	29.14	5499.47	NPP
	04/16/18	5528.61	34.09	NPP	28.84	5499.77	NPP
	08/22/17	5528.61	34.09	NPP	28.70	5499.91	NPP
MW-76	04/17/17	5528.61	34.16	NPP	28.54	5500.07	NPP
	08/15/16	5528.61	34.16	NPP	28.79	5499.82	NPP
	04/15/16	5528.61	34.16	NPP	28.84	5499.77	NPP
	08/13/15	5528.61	34.16	NPP	28.48	5500.13	NPP
	04/28/15	5528.61	34.16	NPP	28.97	5499.64	NPP
	08/01/18	5527.59	34.30	28.95	29.57	5498.52	0.62
	04/16/18	5527.59	34.30	28.48	29.23	5498.96	0.75
	08/23/17	5527.59	34.30	28.63	29.22	5498.84	0.59
MW-77	04/17/17	5527.59	34.30	28.54	29.12	5498.93	0.58
	08/15/16	5527.59	34.30	28.80	29.44	5498.66	0.64
	04/15/16	5527.59	34.30	29.05	29.56	5498.44	0.51
	08/13/15	5527.59	34.30	28.93	29.50	5498.55	0.57
	04/28/15	5527.59	34.30	28.86	29.44	5498.61	0.58

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/02/18	5510.77	22.75	NPP	11.66	5499.11	NPP
	04/16/18	5510.77	22.75	NPP	11.52	5499.25	NPP
	08/23/17	5510.77	22.73	NPP	11.34	5499.43	NPP
	04/18/17	5510.77	22.73	NPP	10.53	5500.24	NPP
	08/16/16	5510.77	22.73	NPP	10.40	5500.37	NPP
D 02	04/18/16	5510.77	22.73	NPP	11.55	5499.22	NPP
F-03	08/13/15	5510.77	22.73	NPP	10.71	5500.06	NPP
	04/27/15	5510.77	22.73	NPP	11.09	5499.68	NPP
	08/18/14	5510.77	22.73	NPP	10.27	5500.50	NPP
	04/02/14	5510.77	22.73	NPP	11.27	5499.50	NPP
	08/05/13	5510.77	22.73	NPP	11.04	5499.73	NPP
	04/08/13	5510.77	22.73	NPP	11.62	5499.15	NPP
	08/02/18	5517.80	80.55	NPP	77.35	5440.45	NPP
	04/20/18	5517.80	80.55	NPP	77.35	5440.45	NPP
	08/13/15	5517.80	79.00	NPP	77.43	5440.37	NPP
	04/27/15	5517.80	79.00	NPP	77.30	5440.50	NPP
BCK-1	08/18/14	5517.80	79.00	NPP	77.37	5440.43	NPP
	08/05/13	5517.80	79.00	NPP	77.28	5440.52	NPP
	04/08/13	5517.80	79.00	NPP	77.15	5440.65	NPP
	08/06/12	5517.80	79.00	NPP	77.12	5440.68	NPP
	04/02/12	5517.80	79.00	NPP	77.07	5440.73	NPP
	08/02/18	5620.14	46.95	NPP	25.85	5594.29	NPP
	04/20/18	5620.14	46.95	NPP	25.10	5595.04	NPP
	08/13/15	5620.14	46.97	NPP	26.10	5594.04	NPP
	04/27/15	5620.14	46.97	NPP	25.57	5594.57	NPP
BCK-2	08/18/14	5620.14	46.97	NPP	28.10	5592.04	NPP
	08/05/13	5620.14	46.97	NPP	26.52	5593.62	NPP
	04/08/13	5620.14	46.97	NPP	25.58	5594.56	NPP
	08/06/12	5620.14	46.97	NPP	27.17	5592.97	NPP
	04/02/12	5620.14	46.97	NPP	25.81	5594.33	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5529.34	40.93	NPP	31.12	5498.22	NPP
	04/16/18	5529.34	40.91	NPP	30.80	5498.54	NPP
	08/22/17	5529.34	40.80	NPP	30.84	5498.50	NPP
	04/17/17	5529.34	40.80	NPP	30.52	5498.82	NPP
	08/16/16	5529.34	40.80	30.6	30.71	5498.72	0.11
	04/15/16	5529.34	40.80	NPP	31.31	5498.03	NPP
RVV-01	08/13/15	5529.34	40.80	30.77	30.78	5498.57	0.01
	04/27/15	5529.34	40.80	NPP	30.83	5498.51	NPP
	08/18/14	5529.34	40.80	NPP	31.15	5498.19	NPP
	04/02/14	5529.34	40.80	NPP	31.62	5497.72	NPP
	08/05/13	5529.34	40.80	31.29	31.30	5498.05	0.01
	04/08/13	5529.34	40.80	NPP	31.57	5497.77	NPP
	08/01/18	5526.94	35.00	NPP	26.72	5500.22	NPP
	04/16/18	5526.94	35.10	NPP	26.55	5500.39	NPP
	08/22/17	5526.94	35.86	NPP	26.35	5500.59	NPP
	04/17/17	5526.94	35.86	NPP	26.08	5500.86	NPP
	08/15/16	5526.94	35.86	NPP	26.43	5500.51	NPP
DW 02	04/15/16	5526.94	35.86	NPP	26.35	5500.59	NPP
NVV-02	08/13/15	5526.94	35.86	NPP	26.26	5500.68	NPP
	04/27/15	5526.94	35.86	NPP	26.37	5500.57	NPP
	08/18/14	5526.94	35.86	26.69	26.79	5500.23	0.10
	04/02/14	5526.94	35.86	NPP	26.67	5500.27	NPP
	08/05/13	5526.94	35.86	NPP	26.70	5500.24	NPP
	04/08/13	5526.94	35.86	NPP	26.65	5500.29	NPP
	08/01/18	5520.35	33.75	NPP	22.08	5498.27	NPP
	04/16/18	5520.35	33.78	NPP	21.72	5498.63	NPP
	08/22/17	5520.35	34.57	NM	NM	NM	NM
	04/17/17	5520.35	34.57	NPP	21.33	5499.02	NPP
	08/16/16	5520.35	34.57	NPP	21.34	5499.01	NPP
RW-03	04/15/16	5520.35	34.57	NPP	22.25	5498.10	NPP
1100-05	08/13/15	5520.35	34.57	NPP	22.02	5498.33	NPP
	04/27/15	5520.35	34.57	NPP	21.59	5498.76	NPP
	08/18/14	5520.35	34.57	NPP	21.53	5498.82	NPP
	04/02/14	5520.35	34.57	NPP	22.42	5497.93	NPP
	08/05/13	5520.35	34.57	NPP	22.10	5498.25	NPP
	04/08/13	5520.35	34.57	NPP	22.57	5497.78	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5523.21	33.54	24.73	24.74	5498.48	0.01
DW/ 00	04/16/18	5523.21	33.55	NPP	24.65	5498.56	NPP
	08/22/17	5523.21	34.04	24.55	24.58	5498.65	0.03
	04/17/17	5523.21	34.04	24.55	24.56	5498.66	0.01
	08/16/16	5523.21	34.04	24.64	24.67	5498.56	NPP
	04/15/16	5523.21	34.04	24.64	24.67	5498.56	0.03
RW-09	08/13/15	5523.21	34.04	24.64	24.70	5498.56	0.06
	04/27/15	5523.21	34.04	24.77	24.87	5498.42	0.10
	08/18/14	5523.21	34.04	24.75	25.09	5498.39	0.34
	04/02/14	5523.21	34.04	NPP	24.89	5498.32	NPP
	08/05/13	5523.21	34.04	24.61	24.95	5498.53	0.34
	04/08/13	5523.21	34.04	24.78	25.10	5498.37	0.32
	08/01/18	5537.50	41.92	NPP	35.65	5501.85	NPP
	04/16/18	5537.50	41.92	35.49	35.50	5502.01	0.01
	08/22/17	5537.50	41.94	NPP	35.07	5502.43	NPP
	04/17/17	5537.50	41.94	35.13	35.59	5502.28	0.46
	08/15/16	5537.50	41.94	34.79	34.83	5502.70	0.04
	04/15/16	5537.50	41.94	34.79	36.09	5502.45	1.30
NVV-14	08/13/15	5537.50	41.94	NPP	34.92	5502.58	NPP
	04/27/15	5537.50	41.94	NPP	34.95	5502.55	NPP
	08/18/14	5537.50	41.94	35.94	36.05	5501.54	0.11
	04/02/14	5537.50	41.94	35.49	35.50	5502.01	0.01
	08/05/13	5537.50	41.94	NPP	35.29	5502.21	NPP
	04/08/13	5537.50	41.94	NPP	35.30	5502.20	NPP
	08/01/18	5536.83	42.22	NPP	35.40	5501.43	NPP
	04/16/18	5536.83	42.22	NPP	35.25	5501.58	NPP
	08/22/17	5536.83	43.43	NPP	34.85	5501.98	NPP
	04/18/17	5536.83	43.43	NPP	34.90	5501.93	NPP
	08/15/16	5536.83	43.43	NPP	34.68	5502.15	NPP
PW_15	04/15/16	5536.83	43.43	NPP	34.89	5501.75	NPP
KW-15	08/13/15	5536.83	43.43	NPP	34.46	5501.71	NPP
	04/27/15	5536.83	43.43	NPP	34.75	5501.86	NPP
	08/18/14	5536.83	43.43	NPP	35.95	5500.22	NPP
	04/02/14	5536.83	43.43	NPP	35.31	5501.52	NPP
	08/05/13	5536.83	43.43	NPP	35.12	5501.71	NPP
	04/08/13	5536.83	43.43	NPP	35.11	5501.72	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5535.45	43.13	NPP	34.42	5501.03	NPP
	04/16/18	5535.45	43.16	NPP	34.26	5501.19	NPP
	08/22/17	5535.45	41.48	NPP	33.94	5501.51	NPP
	04/18/17	5535.45	41.48	NPP	33.90	5501.55	NPP
	08/15/16	5535.45	41.48	NPP	33.85	5501.60	NPP
	04/15/16	5535.45	41.48	33.87	33.90	5501.57	0.03
RVV-10	08/13/15	5535.45	41.48	33.30	35.50	5501.71	2.20
	04/27/15	5535.45	41.48	33.83	34.15	5501.56	0.32
	08/18/14	5535.45	41.48	34.21	34.49	5501.18	0.28
	04/02/14	5535.45	41.48	34.31	34.89	5501.02	0.58
	08/05/13	5535.45	41.48	34.30	34.62	5501.09	0.32
	04/08/13	5535.45	41.48	34.10	34.20	5501.33	0.10
	08/01/18	5533.84	39.88	NPP	33.28	5500.56	NPP
	04/16/18	5533.84	40.10	NPP	33.08	5500.76	NPP
	08/22/17	5533.84	41.89	NPP	32.85	5500.99	NPP
	04/18/17	5533.84	41.89	NPP	32.76	5501.08	NPP
	08/15/16	5533.84	41.89	NPP	32.94	5500.90	NPP
DW/ 17	04/15/16	5533.84	41.89	NPP	32.89	5500.95	NPP
	08/13/15	5533.84	41.89	32.67	32.68	5501.17	0.01
	04/27/15	5533.84	41.89	33.04	33.08	5500.79	0.04
	08/18/14	5533.84	41.89	NPP	33.27	5500.57	NPP
	04/02/14	5533.84	41.89	NPP	33.39	5500.45	NPP
	08/05/13	5533.84	41.89	NPP	33.32	5500.52	NPP
	04/08/13	5533.84	41.89	NPP	33.18	5500.66	NPP
	08/01/18	5529.38	34.40	NPP	30.08	5499.30	NPP
	04/16/18	5529.38	34.40	NPP	29.87	5499.51	NPP
	08/23/17	5529.38	37.58	NPP	29.76	5499.62	NPP
	04/17/17	5529.38	37.58	NPP	29.71	5499.67	NPP
	08/16/16	5529.38	37.58	NPP	32.92	5496.46	NPP
RW-18	04/15/16	5529.38	37.58	NPP	29.84	5499.54	NPP
RVV-18	08/13/15	5529.38	37.58	NPP	29.88	5499.50	NPP
	04/27/15	5529.38	37.58	NPP	30.02	5499.36	NPP
	08/18/14	5529.38	37.58	30.32	32.02	5498.72	1.70
	04/02/14	5529.38	37.58	NPP	30.47	5498.91	NPP
	08/05/13	5529.38	37.58	NPP	31.64	5497.74	NPP
	04/08/13	5529.38	37.58	NPP	30.18	5499.20	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5530.51	35.70	30.21	31.46	5500.05	1.25
	04/16/18	5530.51	35.60	30.10	30.37	5500.36	0.27
	08/23/17	5530.51	36.64	NPP	29.86	5500.65	NPP
	04/17/17	5530.51	36.64	29.70	30.65	5500.62	0.95
	08/15/16	5530.51	36.64	NPP	31.16	5499.35	NPP
	04/15/16	5530.51	36.64	NPP	30.04	5500.47	NPP
KVV-19	08/13/15	5530.51	36.64	NPP	29.96	5500.55	NPP
	04/27/15	5530.51	36.64	NPP	30.15	5500.36	NPP
	08/18/14	5530.51	36.64	30.30	30.75	5500.12	0.45
	04/02/14	5530.51	36.64	30.50	30.85	5499.94	0.35
	08/05/13	5530.51	36.64	NPP	30.50	5500.01	NPP
	04/08/13	5530.51	36.64	NPP	30.40	5500.11	NPP
	08/01/18	5524.44	35.32	NPP	25.65	5498.79	NPP
	04/16/18	5524.44	35.33	NPP	25.51	5498.93	NPP
	08/22/17	5524.44	35.60	NPP	25.36	5499.08	NPP
	04/17/17	5524.44	35.60	25.37	25.39	5499.07	0.02
	08/16/16	5524.44	35.60	25.51	25.74	5498.88	0.23
RW-22	04/15/16	5524.44	35.60	25.50	25.73	5498.89	0.23
11.00-22	08/13/15	5524.44	35.60	25.50	25.55	5498.93	0.05
	04/27/15	5524.44	35.60	25.70	25.80	5498.72	0.10
	08/18/14	5524.44	35.60	25.73	26.17	5498.62	0.44
	04/02/14	5524.44	35.60	25.87	26.07	5498.53	0.20
	08/05/13	5524.44	35.60	NPP	25.62	5498.82	NPP
	04/08/13	5524.44	35.60	NPP	25.80	5498.64	NPP
	08/01/18	5521.38	35.55	23.21	23.25	5498.16	0.04
	04/16/18	5521.38	35.55	23.20	23.25	5498.17	0.05
	08/22/17	5521.38	35.53	NPP	23.09	5498.29	NPP
	04/17/17	5521.38	35.53	23.06	23.15	5498.30	0.09
	08/16/16	5521.38	35.53	22.81	22.93	5498.55	0.12
RW-23	04/15/16	5521.38	35.53	23.13	23.39	5498.20	0.26
RVV-23	08/13/15	5521.38	35.53	23.80	23.82	5497.58	0.02
	04/27/15	5521.38	35.53	NPP	23.70	5497.68	NPP
	08/18/14	5521.38	35.53	23.05	23.08	5498.32	0.03
	04/02/14	5521.38	35.53	NPP	23.26	5498.12	NPP
	08/05/13	5521.38	35.53	NPP	23.15	5498.23	NPP
	04/08/13	5521.38	35.53	NPP	23.30	5498.08	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5527.93	37.00	29.19	29.98	5498.58	0.79
	04/16/18	5527.93	37.00	28.94	28.95	5498.99	0.01
	08/22/17	5527.93	36.99	29.09	29.79	5498.70	0.70
	04/18/17	5527.93	36.99	28.96	30.07	5498.75	1.11
	08/16/16	5527.93	36.99	29.10	29.36	5498.78	0.26
	04/15/16	5527.93	36.99	29.05	29.06	5498.88	0.01
KVV-20	08/13/15	5527.93	36.99	26.92	26.93	5501.01	0.01
	04/27/15	5527.93	36.99	29.18	29.76	5498.63	0.58
	08/18/14	5527.93	36.99	29.56	30.02	5498.28	0.46
	04/02/14	5527.93	36.99	29.55	30.45	5498.20	0.90
	08/05/13	5527.93	36.99	29.28	30.40	5498.43	1.12
	04/08/13	5527.93	36.99	29.35	30.50	5498.35	1.15
	08/01/18	5527.48	31.97	NPP	27.36	5500.12	NPP
	04/16/18	5527.48	31.95	NPP	27.11	5500.37	NPP
	08/23/17	5527.48	31.95	NPP	27.00	5500.48	NPP
	04/17/17	5527.48	32.02	NPP	26.96	5500.52	NPP
	08/15/16	5527.48	32.02	NPP	27.10	5500.38	NPP
PW-42	04/15/16	5527.48	32.02	NPP	27.03	5500.45	NPP
11.00-42	08/13/15	5527.48	32.02	26.92	26.93	5500.56	0.01
	04/27/15	5527.48	32.02	27.15	27.18	5500.32	0.03
	08/18/14	5527.48	32.02	27.36	27.70	5500.05	0.34
	04/02/14	5527.48	32.02	27.59	28.00	5499.81	0.41
	08/05/13	5527.48	32.02	27.40	27.55	5500.05	0.15
	04/08/13	5527.48	32.02	27.37	27.79	5500.03	0.42
	08/01/18	5520.02	24.19	20.72	20.74	5499.30	0.02
	04/16/18	5520.02	24.18	NPP	20.60	5499.42	NPP
	08/22/17	5520.02	24.20	NPP	20.40	5499.62	NPP
	04/17/17	5520.02	24.03	NPP	20.45	5499.57	NPP
	08/15/16	5520.02	24.03	NPP	20.44	5499.58	NPP
RW-43	04/15/16	5520.02	24.03	NPP	20.51	5499.51	NPP
1111 - 10	08/13/15	5520.02	24.03	20.30	20.33	5499.71	0.03
	04/27/15	5520.02	24.03	20.53	20.75	5499.45	0.22
	08/18/14	5520.02	24.03	21.80	22.00	5498.18	0.20
	04/02/14	5520.02	24.03	21.76	22.25	5498.16	0.49
	08/05/13	5520.02	24.03	21.75	21.91	5498.24	0.16
	04/08/13	5520.02	24.03	21.87	22.03	5498.12	0.16

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5506.62	12.30	NPP	12.10	5494.52	NPP
	04/17/18	5506.62	12.29	NPP	11.95	5494.67	NPP
	08/23/17	5506.62	12.03	NPP	11.91	5494.71	NPP
	04/18/17	5506.62	12.26	NPP	11.66	5494.96	NPP
	08/16/16	5506.62	12.26	NPP	11.14	5495.48	NPP
	04/15/16	5506.62	12.26	NPP	11.78	5494.84	NPP
000 0+60	08/13/15	5506.62	12.26	NPP	10.77	5495.85	NPP
	04/21/15	5506.62	12.26	NPP	11.24	5495.38	NPP
	08/18/14	5506.62	12.26	NPP	11.01	5495.61	NPP
	04/02/14	5506.62	12.26	NPP	11.91	5494.71	NPP
	08/05/13	5506.62	12.26	NPP	11.85	5494.77	NPP
	04/08/13	5506.62	12.26	NPP	12.07	5494.55	NPP
	08/01/18	5508.03	14.38	14.33	NWP	NWP	NPP
	04/17/18	5508.03	14.36	14.23	14.25	5493.80	0.02
	08/23/17	5508.03	14.37	NPP	14.05	5493.98	NPP
	04/18/17	5508.03	14.36	NPP	13.74	5494.29	NPP
	08/16/16	5508.03	14.36	NPP	13.06	5494.97	NPP
0144.50	04/15/16	5508.03	14.36	NPP	13.72	5494.31	NPP
000 1+50	08/13/15	5508.03	14.36	NPP	12.62	5495.41	NPP
	04/21/15	5508.03	14.36	NPP	13.24	5494.79	NPP
	08/18/14	5508.03	14.36	NPP	13.17	5494.86	NPP
	04/02/14	5508.03	14.36	NPP	13.98	5494.05	NPP
	08/05/13	5508.03	14.36	14.02	14.03	5494.01	0.01
	04/08/13	5508.03	14.36	NPP	14.05	5493.98	NPP
	08/01/18	5507.31	15.10	NPP	13.92	5493.39	NPP
	04/17/18	5507.31	15.08	NPP	13.73	5493.58	NPP
	08/23/17	5507.31	15.08	NPP	13.56	5493.75	NPP
	04/17/17	5507.31	15.06	NPP	13.14	5494.17	NPP
	08/15/16	5507.31	15.06	NPP	12.83	5494.48	NPP
01/1/21/95	04/15/16	5507.31	15.06	NPP	13.15	5494.16	NPP
010 3+05	08/13/15	5507.31	15.06	NPP	12.31	5495.00	NPP
	04/21/15	5507.31	15.06	NPP	12.80	5494.51	NPP
	08/18/14	5507.31	15.06	NPP	12.95	5494.36	NPP
	04/02/14	5507.31	15.06	NPP	13.49	5493.82	NPP
	08/05/13	5507.31	15.06	13.56	13.57	5493.75	0.01
	04/08/13	5507.31	15.06	NPP	13.40	5493.91	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5507.59	13.78	NPP	13.57	5494.02	NPP
	04/17/18	5507.59	13.78	NPP	13.65	5493.94	NPP
	08/23/17	5507.59	13.77	NPP	13.41	5494.18	NPP
	04/17/17	5507.59	13.67	NPP	13.42	5494.17	NPP
	08/15/16	5507.59	13.67	NPP	13.29	5494.30	NPP
0141 5 - 50	04/15/16	5507.59	13.67	NPP	13.43	5494.16	NPP
000 5+50	08/13/15	5507.59	13.67	NPP	13.32	5494.27	NPP
	04/21/15	5507.59	13.67	NPP	13.28	5494.31	NPP
	08/18/14	5507.59	13.67	NPP	13.50	5494.09	NPP
	04/02/14	5507.59	13.67	NPP	13.64	5493.95	NPP
	08/05/13	5507.59	13.67	NPP	13.51	5494.08	NPP
	04/08/13	5507.59	13.67	NPP	13.67	5493.92	NPP
	08/01/18	5504.78	16.47	NPP	NWP	NWP	NPP
	04/17/18	5504.78	16.47	NPP	NWP	NWP	NPP
	08/24/17	5504.78	16.48	NPP	NWP	NWP	NPP
	04/17/17	5504.78	14.67	NPP	NWP	NWP	NPP
	08/15/16	5504.78	14.67	NPP	NWP	NWP	NPP
	04/15/16	5504.78	14.67	NPP	NWP	NWP	NPP
000 6+70	08/13/15	5504.78	14.67	NPP	NWP	NWP	NPP
	04/21/15	5504.78	14.67	NPP	NWP	NWP	NPP
	08/18/14	5504.78	14.67	NPP	NWP	NWP	NPP
	04/02/14	5504.78	14.67	NPP	NWP	NWP	NPP
	08/05/13	5504.78	14.67	NPP	NWP	NWP	NPP
	04/08/13	5504.78	14.67	NPP	NWP	NWP	NPP
	08/01/18	5506.53	16.02	NPP	15.54	5490.99	NPP
	04/17/18	5506.53	16.03	NPP	15.55	5490.98	NPP
	08/24/17	5506.53	16.01	NPP	15.25	5491.28	NPP
	04/17/17	5506.53	15.99	NPP	13.99	5492.54	NPP
	08/15/16	5504.78	15.99	NPP	14.69	5490.09	NPP
	04/15/16	5504.78	15.99	NPP	NWP	NWP	NPP
000 0+10	08/13/15	5506.53	15.99	NPP	NWP	NWP	NPP
	04/21/15	5506.53	15.99	NPP	NWP	NWP	NPP
	08/18/14	5506.53	15.99	NPP	NWP	NWP	NPP
	04/02/14	5506.53	15.99	NPP	NWP	NWP	NPP
	08/05/13	5506.53	15.99	NPP	NWP	NWP	NPP
	04/08/13	5506.53	15.99	NPP	NWP	NWP	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5506.70	16.60	NPP	12.65	5494.05	NPP
	04/17/18	5506.70	16.60	NPP	12.64	5494.06	NPP
	08/24/17	5506.70	16.59	NPP	12.53	5494.17	NPP
	04/17/17	5506.70	16.59	NPP	12.56	5494.14	NPP
	08/15/16	5506.70	16.59	NPP	12.53	5494.17	NPP
014/14/14	04/15/16	5506.70	16.59	NPP	12.65	5494.05	NPP
OW 11+15	08/13/15	5506.70	16.59	NPP	12.47	5494.23	NPP
	04/21/15	5506.70	16.59	NPP	12.59	5494.11	NPP
	08/18/14	5506.70	16.59	NPP	12.55	5494.15	NPP
	04/02/14	5506.70	16.59	12.74	12.75	5493.96	0.01
	08/05/13	5506.70	16.59	12.56	12.57	5494.14	0.01
	04/08/13	5506.70	16.59	12.71	12.72	5493.99	0.01
	08/01/18	5508.14	12.99	NPP	NWP	NWP	NPP
	04/17/18	5508.14	12.97	NPP	NWP	NWP	NPP
	08/24/17	5508.14	12.96	NPP	NWP	NWP	NPP
	04/17/17	5508.14	12.96	NPP	NWP	NWP	NPP
	08/15/16	5508.14	12.96	NPP	NWP	NWP	NPP
014/14/10	04/15/16	5508.14	12.96	NPP	NWP	NWP	NPP
000 14+10	08/13/15	5508.14	12.96	NPP	NWP	NWP	NPP
	04/21/15	5508.14	12.96	NPP	NWP	NWP	NPP
	08/18/14	5508.14	12.96	NPP	NWP	NWP	NPP
	04/02/14	5508.14	12.96	NPP	NWP	NWP	NPP
	08/05/13	5508.14	12.96	NPP	NWP	NWP	NPP
	04/08/13	5508.14	12.96	NPP	NWP	NWP	NPP
	08/01/18	5508.43	15.25	NPP	12.98	5495.45	NPP
	04/17/18	5508.43	15.25	NPP	13.43	5495.00	NPP
	08/24/17	5508.43	15.25	NPP	13.05	5495.38	NPP
	04/17/17	5508.43	15.21	NPP	12.73	5495.70	NPP
	08/15/16	5508.43	15.21	NPP	13.04	5495.39	NPP
0.16.60	04/15/16	5508.43	15.21	NPP	13.06	5495.37	NPP
010 10+00	08/13/15	5508.43	15.21	NPP	12.78	5495.65	NPP
	04/21/15	5508.43	15.21	NPP	12.78	5495.65	NPP
	08/18/14	5508.43	15.21	NPP	13.25	5495.18	NPP
	04/02/14	5508.43	15.21	NPP	13.10	5495.33	NPP
	08/05/13	5508.43	15.21	NPP	13.95	5494.48	NPP
	04/08/13	5508.43	15.21	NPP	13.16	5495.27	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5508.03	13.00	NPP	NWP	NWP	NPP
	04/17/18	5508.03	13.00	NPP	NWP	NWP	NPP
	08/24/17	5508.03	13.00	NPP	12.88	5495.15	NPP
	04/17/17	5508.03	13.00	NPP	11.85	5496.18	NPP
	08/15/16	5508.03	13.00	NPP	12.95	5495.08	NPP
	04/15/16	5508.03	13.00	NPP	12.69	5495.34	NPP
010 19+50	08/13/15	5508.03	13.00	NPP	NWP	NWP	NPP
	04/21/15	5508.03	13.00	NPP	12.92	5495.11	NPP
	08/18/14	5508.03	13.00	NPP	NWP	NWP	NPP
	04/02/14	5508.03	13.00	NPP	NWP	NWP	NPP
	08/05/13	5508.03	13.00	NPP	NWP	NWP	NPP
	04/08/13	5508.03	13.00	NPP	NWP	NWP	NPP
	08/01/18	5506.91	14.18	NPP	13.32	5493.59	NPP
	04/17/18	5506.91	14.17	NPP	12.39	5494.52	NPP
	08/24/17	5506.91	14.15	NPP	12.91	5494.00	NPP
	04/17/17	5506.91	14.16	NPP	10.59	5496.32	NPP
	08/15/16	5506.91	14.16	NPP	10.88	5496.03	NPP
0\\/ 22+00	04/15/16	5506.91	14.16	NPP	12.05	5494.86	NPP
011 22+00	08/13/15	5506.91	14.16	NPP	10.80	5496.11	NPP
	04/21/15	5506.91	14.16	NPP	11.37	5495.54	NPP
	08/18/14	5506.91	14.16	NPP	12.74	5494.17	NPP
	04/02/14	5506.91	14.16	NPP	11.73	5495.18	NPP
	08/05/13	5506.91	14.16	NPP	13.04	5493.87	NPP
	04/08/13	5506.91	14.16	NPP	12.17	5494.74	NPP
	08/01/18	5514.12	18.35	NPP	16.75	5497.37	NPP
	04/17/18	5514.12	18.35	NPP	16.58	5497.54	NPP
	08/24/17	5514.12	18.34	NPP	16.65	5497.47	NPP
	04/17/17	5514.12	18.34	NPP	16.46	5497.66	NPP
	08/15/16	5514.12	18.34	NPP	16.37	5497.75	NPP
0\\/ 23+10	04/15/16	5514.12	18.34	NPP	16.48	5497.64	NPP
011 23+10	08/13/15	5514.12	18.34	NPP	16.46	5497.66	NPP
	04/21/15	5514.12	18.34	NPP	16.40	5497.72	NPP
	08/18/14	5514.12	18.34	NPP	16.50	5497.62	NPP
	04/02/14	5514.12	18.34	NPP	16.42	5497.70	NPP
	08/05/13	5514.12	18.34	NPP	16.46	5497.66	NPP
	04/08/13	5514.12	18.34	NPP	16.38	5490.53	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5515.18	18.10	NPP	17.58	5497.60	NPP
	04/17/18	5515.18	18.08	NPP	17.42	5497.76	NPP
	08/24/17	5515.18	18.01	NPP	17.47	5497.71	NPP
	04/17/17	5515.18	18.01	NPP	17.37	5497.81	NPP
	08/15/16	5515.18	18.01	NPP	17.25	5497.93	NPP
014/00.00	04/15/16	5515.18	18.01	NPP	17.34	5497.84	NPP
000 23+90	08/13/15	5515.18	18.01	NPP	17.30	5497.88	NPP
	04/21/15	5515.18	18.01	NPP	17.28	5497.90	NPP
	08/18/14	5515.18	18.01	NPP	17.33	5497.85	NPP
	04/02/14	5515.18	18.01	NPP	17.26	5497.92	NPP
	08/05/13	5515.18	18.01	NPP	17.29	5497.89	NPP
	04/08/13	5515.18	18.01	NPP	17.22	5497.96	NPP
	08/01/18	5509.00	13.98	NPP	11.20	5497.80	NPP
	04/17/18	5509.00	13.98	NPP	11.10	5497.90	NPP
	08/24/17	5509.00	14.00	NPP	11.17	5497.83	NPP
	04/17/17	5509.00	13.98	NPP	10.97	5498.03	NPP
	08/15/16	5509.00	13.98	NPP	10.90	5498.10	NPP
	04/15/16	5509.00	13.98	NPP	10.97	5498.03	NPP
000 20+70	08/13/15	5509.00	13.98	NPP	10.97	5498.03	NPP
	04/21/15	5509.00	13.98	NPP	10.92	5498.08	NPP
	08/18/14	5509.00	13.98	NPP	10.96	5498.04	NPP
	04/02/14	5509.00	13.98	NPP	10.95	5498.05	NPP
	08/05/13	5509.00	13.98	NPP	10.93	5498.07	NPP
	04/08/13	5509.00	13.98	NPP	10.86	5498.14	NPP
	08/01/18	5506.68	14.10	NPP	8.76	5497.92	NPP
	04/17/18	5506.68	13.98	NPP	8.41	5498.27	NPP
	08/22/17	5506.68	14.09	NPP	8.49	5498.19	NPP
	04/18/17	5506.68	14.09	NPP	8.00	5498.68	NPP
	08/16/16	5506.68	14.09	NPP	7.99	5498.69	NPP
	04/15/16	5506.68	14.09	NPP	8.88	5497.80	NPP
	08/13/15	5506.68	14.09	NPP	8.23	5498.45	NPP
	04/21/15	5506.68	14.09	NPP	8.24	5498.44	NPP
	08/18/14	5506.68	14.09	NPP	8.19	5498.49	NPP
	04/02/14	5506.68	14.09	NPP	9.01	5497.67	NPP
	08/05/13	5506.68	14.09	NPP	8.53	5498.15	NPP
	04/08/13	5506.68	14.09	NPP	9.12	5497.56	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5505.13	13.40	NPP	7.05	5498.08	NPP
	04/17/18	5505.13	13.35	NPP	6.75	5498.38	NPP
	08/23/17	5505.13	13.38	NPP	6.80	5498.33	NPP
	04/18/17	5505.13	13.74	NPP	6.51	5498.62	NPP
	08/16/16	5505.13	13.74	NPP	6.59	5498.54	NPP
014/4.50	04/15/16	5505.13	13.74	NPP	7.22	5497.91	NPP
CW 1+50	08/13/15	5505.13	13.74	NPP	6.84	5498.29	NPP
	04/21/15	5505.13	13.74	NPP	6.77	5498.36	NPP
	08/18/14	5505.13	13.74	NPP	6.92	5498.21	NPP
	04/02/14	5505.13	13.74	NPP	7.47	5497.66	NPP
	08/05/13	5505.13	13.74	NPP	7.13	5498.00	NPP
	04/08/13	5505.13	13.74	NPP	7.49	5497.64	NPP
	08/01/18	5503.87	13.12	NPP	5.45	5498.42	NPP
	04/17/18	5503.87	13.12	NPP	5.65	5498.22	NPP
	08/23/17	5503.87	13.11	NPP	5.60	5498.27	NPP
	04/17/17	5503.87	13.11	NPP	5.48	5498.39	NPP
	08/15/16	5503.87	13.11	NPP	5.52	5498.35	NPP
	04/15/16	5503.87	13.11	NPP	5.91	5497.96	NPP
CVV 3+65	08/13/15	5503.87	13.11	NPP	5.70	5498.17	NPP
	04/21/15	5503.87	13.11	NPP	5.60	5498.27	NPP
	08/18/14	5503.87	13.11	NPP	5.85	5498.02	NPP
	04/02/14	5503.87	13.11	NPP	6.14	5497.73	NPP
	08/05/13	5503.87	13.11	NPP	5.98	5497.89	NPP
	04/08/13	5503.87	13.11	NPP	6.17	5497.70	NPP
	08/01/18	5503.76	12.25	NPP	6.55	5497.21	NPP
	04/17/18	5503.76	12.23	NPP	6.40	5497.36	NPP
	08/23/17	5503.76	12.27	NPP	6.45	5497.31	NPP
	04/17/17	5503.76	12.27	NPP	6.36	5497.40	NPP
	08/15/16	5503.76	12.27	NPP	6.30	5497.46	NPP
	04/15/16	5503.76	12.27	NPP	6.39	5497.37	NPP
Cvv 5+50	08/13/15	5503.76	12.27	NPP	6.38	5497.38	NPP
	04/21/15	5503.76	12.27	NPP	6.35	5497.41	NPP
	08/18/14	5503.76	12.27	NPP	6.58	5497.18	NPP
	04/02/14	5503.76	12.27	NPP	6.63	5497.13	NPP
	08/05/13	5503.76	12.27	NPP	6.50	5497.26	NPP
	04/08/13	5503.76	12.27	NPP	6.63	5497.13	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5503.84	6.80	NPP	NWP	NWP	NPP
	04/17/18	5503.84	6.80	NPP	6.72	5497.12	NPP
	08/24/17	5503.84	11.50	NPP	6.94	5496.90	NPP
	04/17/17	5503.84	11.45	NPP	6.61	5497.23	NPP
	08/15/16	5503.84	11.45	NPP	6.54	5497.30	NPP
	04/15/16	5503.84	11.45	NPP	6.61	5497.23	NPP
CVV 0+70	08/13/15	5503.84	11.45	NPP	6.38	5497.46	NPP
	04/21/15	5503.84	11.45	NPP	6.63	5497.21	NPP
	08/18/14	5503.84	11.45	NPP	6.70	5497.14	NPP
	04/02/14	5503.84	11.45	NPP	6.96	5496.88	NPP
	08/05/13	5503.84	11.45	NPP	6.87	5496.97	NPP
	04/08/13	5503.84	11.45	NPP	6.93	5496.83	NPP
	08/01/18	5504.02	11.37	NPP	7.87	5496.15	NPP
	04/17/18	5504.02	11.35	NPP	7.70	5496.32	NPP
	08/24/17	5504.02	11.35	NPP	7.69	5496.33	NPP
	04/17/17	5504.02	11.63	NPP	7.45	5496.57	NPP
	08/15/16	5504.02	11.63	NPP	7.35	5496.67	NPP
CW 9,10	04/15/16	5504.02	11.63	NPP	7.56	5496.46	NPP
CVV 0+10	08/13/15	5504.02	11.63	NPP	7.48	5496.54	NPP
	04/21/15	5504.02	11.63	NPP	7.43	5496.59	NPP
	08/18/14	5504.02	11.63	NPP	7.43	5496.59	NPP
	04/02/14	5504.02	11.63	NPP	7.80	5496.22	NPP
	08/05/13	5504.02	11.63	NPP	7.60	5496.42	NPP
	04/08/13	5504.02	11.63	NPP	7.80	5496.22	NPP
	08/01/18	5503.80	12.61	NPP	8.15	5495.65	NPP
	04/17/18	5503.80	12.61	NPP	7.95	5495.85	NPP
	08/24/17	5503.80	12.60	NPP	7.92	5495.88	NPP
	04/17/17	5503.80	12.60	NPP	7.67	5496.13	NPP
	08/15/16	5503.80	12.60	NPP	7.51	5496.29	NPP
	04/15/16	5503.80	12.60	NPP	7.70	5496.10	NPP
CW 0743	08/13/15	5503.80	12.60	NPP	7.65	5496.15	NPP
	04/21/15	5503.80	12.60	NPP	7.68	5496.12	NPP
	08/18/14	5503.80	12.60	NPP	7.58	5496.22	NPP
	04/02/14	5503.80	12.60	NPP	7.94	5495.86	NPP
	08/05/13	5503.80	12.60	NPP	7.74	5496.06	NPP
	04/08/13	5503.80	12.60	NPP	7.91	5495.89	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5503.95	12.29	6.10	6.14	5497.84	0.04
	04/17/18	5503.95	12.29	NPP	6.00	5497.95	NPP
	08/24/17	5503.95	12.40	5.91	6.13	5498.00	0.22
	04/17/17	5503.95	12.27	5.81	6.23	5498.06	0.42
	08/15/16	5503.95	12.27	NPP	5.99	5497.96	NPP
0144445	04/15/16	5503.95	12.27	5.91	6.36	5497.95	0.45
CW 11+15	08/13/15	5503.95	12.27	5.87	6.85	5497.88	0.98
	04/21/15	5503.95	12.27	5.97	7.05	5497.76	1.08
	08/18/14	5503.95	12.27	5.99	7.93	5497.57	1.94
	04/02/14	5503.95	12.27	6.00	7.95	5497.56	1.95
	08/05/13	5503.95	12.27	NPP	6.31	5497.64	NPP
	04/08/13	5503.95	12.27	NPP	6.22	5497.73	NPP
	08/01/18	5504.39	13.04	NPP	6.48	5497.91	NPP
	04/17/18	5504.39	13.04	NPP	6.52	5497.87	NPP
	08/24/17	5504.39	13.05	NPP	6.50	5497.89	NPP
	04/17/17	5504.39	13.05	NPP	6.39	5498.00	NPP
	08/15/16	5504.39	13.05	NPP	6.29	5498.10	NPP
014/14/10	04/15/16	5504.39	13.05	NPP	6.25	5498.14	NPP
CW 14+10	08/13/15	5504.39	13.05	NPP	6.44	5497.95	NPP
	04/21/15	5504.39	13.05	NPP	6.38	5498.01	NPP
	08/18/14	5504.39	13.05	NPP	6.25	5498.14	NPP
	04/02/14	5504.39	13.05	NPP	6.45	5497.94	NPP
	08/05/13	5504.39	13.05	NPP	6.24	5498.15	NPP
	04/08/13	5504.39	13.05	NPP	6.47	5497.92	NPP
	08/01/18	5504.32	12.88	NPP	6.30	5498.02	NPP
	04/17/18	5504.32	12.88	NPP	6.33	5497.99	NPP
	08/24/17	5504.32	12.86	NPP	6.24	5498.08	NPP
	04/17/17	5504.32	12.86	NPP	6.20	5498.12	NPP
	08/15/16	5504.32	12.86	NPP	6.09	5498.23	NPP
CW 16,60	04/15/16	5504.32	12.86	NPP	6.20	5498.12	NPP
CW 10+00	08/13/15	5504.32	12.86	NPP	6.23	5498.09	NPP
	04/21/15	5504.32	12.86	NPP	6.18	5498.14	NPP
	08/18/14	5504.32	12.86	NPP	6.11	5498.21	NPP
	04/02/14	5504.32	12.86	NPP	6.29	5498.03	NPP
	08/05/13	5504.32	12.86	NPP	5.98	5498.34	NPP
	04/08/13	5504.32	12.86	NPP	6.34	5497.98	NPP
Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
-----------	----------	--	---------------------------------------	---------------------------------------	-------------------------------------	--	--------------------------
	08/01/18	5504.52	9.97	NPP	6.30	5498.22	NPP
	04/17/18	5504.52	9.97	NPP	6.30	5498.22	NPP
	08/24/17	5504.52	9.99	NPP	6.25	5498.27	NPP
	04/17/17	5504.52	9.99	NPP	6.18	5498.34	NPP
	08/15/16	5504.52	9.99	NPP	6.18	5498.34	NPP
	04/15/16	5504.52	9.99	NPP	6.16	5498.36	NPP
CW 19+50	08/13/15	5504.52	9.99	NPP	6.23	5498.29	NPP
	04/21/15	5504.52	9.99	NPP	6.24	5498.28	NPP
	08/18/14	5504.52	9.99	NPP	6.21	5498.31	NPP
	04/02/14	5504.52	9.99	NPP	6.36	5498.16	NPP
	08/05/13	5504.52	9.99	NPP	6.20	5498.32	NPP
	04/08/13	5504.52	9.99	NPP	6.39	5498.13	NPP
	08/01/18	5508.04	12.35	NPP	8.96	5499.08	NPP
	04/17/18	5508.04	12.35	NPP	8.91	5499.13	NPP
	08/24/17	5508.04	12.34	NPP	8.81	5499.23	NPP
	04/17/17	5508.04	12.34	NPP	8.71	5499.33	NPP
	08/15/16	5508.04	12.34	NPP	8.57	5499.47	NPP
CW 22.00	04/15/16	5508.04	12.34	NPP	8.73	5499.31	NPP
GVV 22+00	08/13/15	5508.04	12.34	NPP	8.56	5499.48	NPP
	04/21/15	5508.04	12.34	NPP	8.69	5499.35	NPP
	08/18/14	5508.04	12.34	NPP	8.73	5499.31	NPP
	04/02/14	5508.04	12.34	NPP	9.01	5499.03	NPP
	08/05/13	5508.04	12.34	NPP	8.84	5499.20	NPP
	04/08/13	5508.04	12.34	NPP	8.93	5499.11	NPP
	08/01/18	5510.04	14.80	NPP	10.60	5499.44	NPP
	04/17/18	5510.04	14.80	NPP	10.55	5499.49	NPP
	08/24/17	5510.04	14.65	NPP	7.77	5502.27	NPP
	04/17/17	5510.04	14.65	NPP	10.32	5499.72	NPP
	08/15/16	5508.04	14.65	NPP	10.14	5497.90	NPP
CW/ 22 10	04/15/16	5508.04	14.65	NPP	10.31	5497.73	NPP
GW 23+10	08/13/15	5510.04	14.65	NPP	10.10	5499.94	NPP
	04/21/15	5510.04	14.65	NPP	10.28	5499.76	NPP
	08/18/14	5510.04	14.65	NPP	10.32	5499.72	NPP
	04/02/14	5510.04	14.65	NPP	10.63	5499.41	NPP
	08/05/13	5510.04	14.65	NPP	10.45	5499.59	NPP
	04/08/13	5510.04	14.65	NPP	10.54	5499.50	NPP

		Measuring	Total Well	Depth To	Depth To	Corrected	SPH
Well ID	Date	Point	Depth	Product	Water	Groundwater	Thickness
		(ft ams/)	(ft below TOC)	(ft below TOC)	(ft below TOC)	(ft ams/)	(ft)
	08/01/18	5507.32	11.70	NPP	7.95	5499.37	NPP
	04/17/18	5507.32	11.71	NPP	7.95	5499.37	NPP
	08/24/17	5507.32	11.72	NPP	8.10	5499.22	NPP
	04/17/17	5507.32	11.72	NPP	7.77	5499.55	NPP
	08/15/16	5507.32	11.72	NPP	7.61	5499.71	NPP
CW 22.00	04/15/16	5507.32	11.72	NPP	7.82	5499.50	NPP
CVV 23+90	08/13/15	5507.32	11.72	NPP	7.54	5499.78	NPP
	04/21/15	5507.32	11.72	NPP	NPP 7.74		NPP
	08/18/14	5507.32	11.72	NPP	7.75	5499.57	NPP
	04/02/14	5507.32	11.72	NPP	8.05	5499.27	NPP
	08/05/13	5507.32	11.72	NPP	5499.44	NPP	
	04/08/13	5507.32	11.72	NPP	7.99	5499.33	NPP
	08/01/18	5505.90	12.26	NPP	7.35	5498.55	NPP
	04/17/18	5505.90	12.26	NPP	7.30	5498.60	NPP
	08/24/17	5505.90	12.25	NPP	7.25	5498.65	NPP
	04/17/17	5505.90	12.25	NPP	7.21	5498.69	NPP
	08/15/16	5505.90	12.25	NPP	7.15	5498.75	NPP
CW 25+05	04/15/16	5505.90	12.25	NPP	8.10	5497.80	NPP
011 20+30	08/13/15	5505.90	12.25		Active Reco	overy Well	
	04/21/15	5505.90	12.25		Active Reco	overy Well	
	08/18/14	5505.90	12.25		Active Reco	overy Well	
	04/02/14	5505.90	12.25		Active Reco	overy Well	
	08/05/13	5505.90	12.25		Active Reco	overy Well	
	04/08/13	5505.90	12.25		Active Reco	overy Well	
	08/01/18	5508.27	53.10	NPP	52.60	5455.67	NPP
	04/17/18	5508.27	53.10	NPP	52.60	5455.67	NPP
	08/24/17	5508.27	53.08	NPP	52.58	5455.69	NPP
	04/17/17	5508.27	53.08	NPP	52.58	5455.69	NPP
	08/15/16	5508.27	53.08	NPP	52.61	5455.66	NPP
	04/15/16	5508.27	53.08	NPP	52.58	5455.69	NPP
*\$\\/1_0206	08/12/15	5508.27	53.08	NPP	52.62	5455.65	NPP
3001-0200	05/19/15	5508.27	53.08	NPP	52.63	5455.64	NPP
	04/27/15	5508.27	53.08	NPP	52.61	5455.66	NPP
	03/05/15	5508.27	53.08	NPP	52.61	5455.66	NPP
	12/11/14	5508.27	53.08	NPP	52.65	5455.62	NPP
	07/29/14	5508.27	53.08	NPP	52.63	5455.64	NPP
	08/05/13	5508.27	53.08	NPP	52.58	5455.69	NPP
	04/24/13	5508.27	53.08	NPP	52.58	5455.69	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5508.27	27.72	NPP	24.87	5483.40	NPP
	04/17/18	5508.27	27.70	NPP	24.56	5483.71	NPP
	08/24/17	5508.27	27.69	NPP	24.80	5483.47	NPP
	04/17/17	5508.27	27.69	NPP	24.90	5483.37	NPP
	08/15/16	5508.27	27.69	NPP	25.43	5482.84	NPP
	04/15/16	5508.27	27.69	NPP	25.38	5482.89	NPP
*\$\\\\2 0206	08/12/15	5507.75	27.69	NPP	25.80	5481.95	NPP
3002-0200	05/19/15	5507.75	27.69	NPP	25.74	5482.01	NPP
	04/27/15	5507.75	27.69	NPP	25.69	5482.06	NPP
	03/05/15 5507.75		27.69	NPP	25.48	5482.27	NPP
	12/11/14	5507.75	27.69	NPP	25.41	5482.34	NPP
	07/29/14	5507.75	27.69	NPP	25.89	5481.86	NPP
	08/05/13	5507.75	27.69	NPP	25.62	5482.13	NPP
	04/24/13	5507.75	27.69	NPP	25.27	5482.48	NPP
	08/01/18	5505.29	52.58	NPP	26.90	5478.39	NPP
	04/17/18	5505.29	52.58	NPP	26.50	5478.79	NPP
	08/24/17	5505.29	52.56	NPP	26.42	5478.87	NPP
	04/17/17	5505.29	52.56	NPP	26.55	5478.74	NPP
	08/15/16	5505.29	52.56	NPP	26.36	5478.93	NPP
	04/15/16	5505.29	52.56	NPP	26.56	5478.73	NPP
*5/1/2 0206	08/12/15	5505.29	52.56	NPP	26.53	5478.76	NPP
3003-0200	05/19/15	5505.29	52.56	NPP	26.62	5478.67	NPP
	04/27/15	5505.29	52.56	NPP	26.64	5478.65	NPP
	03/05/15	5505.29	52.56	NPP	26.53	5478.76	NPP
	12/11/14	5505.29	52.56	NPP	26.10	5479.19	NPP
	07/29/14	5505.29	52.56	NPP	26.82	5478.47	NPP
	08/05/13	5505.29	52.56	NPP	26.69	5478.60	NPP
	04/24/13	5505.29	52.56	NPP	26.70	5478.59	NPP

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5504.45	42.35	NPP	33.10	5471.35	NPP
	04/17/18	5504.45	42.35	NPP	32.70	5471.75	NPP
	08/24/17 5		42.34	NPP	33.09	5471.36	NPP
	04/17/17	5504.45	42.34	NPP	32.72	5471.73	NPP
	08/15/16	5504.45	42.34	NPP	33.08	5471.37	NPP
	04/15/16	5504.45	42.34	NPP	32.71	5471.74	NPP
*\$\\\/4 0206	08/12/15	5504.45	42.34	NPP	33.08	5471.37	NPP
3004-0200	05/19/15	5504.45	42.34	NPP	32.81	5471.64	NPP
	04/27/15	5504.45	42.34	NPP	32.78	5471.67	NPP
03/05/15 5504.45		42.34	NPP	32.75	5471.70	NPP	
	12/11/14	5504.45	42.34	NPP	32.98	5471.47	NPP
	07/29/14	5504.45	42.34	NPP	33.05	5471.40	NPP
	08/05/13	5504.45	42.34	NPP	33.01	5471.44	NPP
	04/24/13	5504.45	42.34	NPP	32.60	5471.85	NPP
	08/01/18	5514.34	52.25	NPP	34.26	5480.08	NPP
	04/17/18	5514.34	52.27	NPP	33.85	5480.49	NPP
	08/24/17	5514.34	52.24	NPP	34.04	5480.30	NPP
	04/17/17	5514.34	52.24	NPP	33.29	5481.05	NPP
	08/15/16	5514.34	52.24	NPP	34.03	5480.31	NPP
	04/15/16	5514.34	52.24	NPP	33.93	5480.41	NPP
*CINE 0206	08/12/15	5514.34	52.24	NPP	34.20	5480.14	NPP
3005-0200	05/19/15	5514.34	52.24	NPP	33.82	5480.52	NPP
	04/27/15	5514.34	52.24	NPP	33.73	5480.61	NPP
	03/05/15	5514.34	52.24	NPP	33.78	5480.56	NPP
	12/11/14	5514.34	52.24	NPP	33.75	5480.59	NPP
	07/29/14	5514.34	52.24	NPP	33.75	5480.59	NPP
	08/05/13	5514.34	52.24	NPP	34.93	5479.41	NPP
	04/24/13	5514.34	52.24	NPP	34.27	5480.07	NPP

### Fluid Level Measurements Summary 2018 Groundwater Remediation and Monitoring Annual Report

Well ID	Date	Measuring Point Elevation (ft amsl)	Total Well Depth (ft below TOC)	Depth To Product (ft below TOC)	Depth To Water (ft below TOC)	Corrected Groundwater Elevation (ft amsl)	SPH Thickness (ft)
	08/01/18	5519.72	47.43	NPP	39.75	5479.97	NPP
	04/17/18	5519.72	47.44	NPP	38.52	5481.20	NPP
	08/24/17	5519.72	47.43	NPP	40.92	5478.80	NPP
	04/17/17	5519.72	47.41	NPP	39.06	5480.66	NPP
	08/15/16	5519.72	47.41	NPP	NWP	NWP	NPP
	04/15/16	5519.72	47.41	NPP	39.40	5480.32	NPP
*5/1/6 0206	08/12/15	5519.72	47.41	NPP	41.65	5478.07	NPP
300-0200	05/19/15	5519.72	47.41	NPP	40.88	5478.84	NPP
	04/27/15	5519.72	47.41	NPP	40.74	5478.98	NPP
	03/05/15	5519.72	47.41	NPP	40.23	5479.49	NPP
12/11/		5519.72	47.41	NPP	40.96	5478.76	NPP
	07/29/14	5519.72	47.41	NPP	41.55	5478.17	NPP
	08/05/13	5519.72	47.41	NPP	42.00	5477.72	NPP
	04/24/13	5519.72	47.41	NPP	40.91	5478.81	NPP
	08/01/18	5517.63	32.08	NPP	20.95	5496.68	NPP
	04/17/18	5517.63	32.07	NPP	20.56	5497.07	NPP
	08/24/17	5517.63	32.00	NPP	20.71	5496.92	NPP
	04/17/17	5517.63	32.95	NPP	20.83	5496.80	NPP
	08/15/16	5517.63	32.95	NPP	20.76	5496.87	NPP
	04/15/16	5517.63	32.95	NPP	20.48	5497.15	NPP
	08/12/15	5517.63	32.95	NPP	20.84	5496.79	NPP
*SW7-0206	05/19/15	5517.63	32.95	NPP	20.67	5496.96	NPP
	04/27/15	5517.63	32.95	NPP	20.73	5496.90	NPP
	03/05/15	5517.63	32.95	NPP	20.39	5497.24	NPP
	12/11/14	5517.63	32.95	NPP	20.00	5497.63	NPP
	07/29/14	5517.63	32.95	NPP	20.82	5496.81	NPP
	04/02/14	5517.63	32.95	NPP	20.15	5497.48	NPP
	08/05/13	5517.63	32.95	NPP	20.80	5496.83	NPP
	04/24/13	5517.63	32.95	NPP	20.67	5496.96	NPP

Notes:

\*SW = Wells sampled during significant rain events only

ft = feet

amsl = above mean seal level

NPP = No Product Present

NWP = No Water Present

SPH = Separate Phase Hydrocarbon

NM = Not Measured

### TABLE 2Groundwater Field Parameter Summary2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
Terminal Wells							
	08/10/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/23/16	2438	1.556	5.15	-104.6	6.91	63.84
MW-04	08/24/15	2706	1759	2.23	-110.7	7.05	63.56
	08/25/14	3133	2037	2.53	-131.2	7.07	65.06
	04/12/14	ns	ns	ns	ns	ns	ns
	8/7/2013	1309	852	2.44	-92.1	7.41	68.66
	04/24/13	ns	ns	ns	ns	ns	ns
	04/01/18		well	is not scheduled to be s	ampled		
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	2514	1.633	4.14	43.2	7.68	57.78
	08/22/16	2149	1.398	2.72	107.2	8.04	59.41
	04/20/16	ns	ns	ns	ns	ns	ns
MW-08	08/18/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	ns	ns	ns	ns	ns	ns
	04/12/14	2505	1.6272	4.89	205.9	4.73	59.06
	8/8/2013	2067	1346	3.33	94.9	5.91	58.58
	04/24/13	2292	1	34.64	387.3	3.74	56.00
	08/01/18	ns	ns	ns	ns	ns	ns
	04/18/18	ns	ns	ns	ns	ns	ns
MW-20	08/24/17	ns	ns	ns	ns	ns	ns
11111 20	04/21/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/15/16	ns	ns	ns	ns	ns	ns
	08/13/18	3933	2554	0.59	-68.3	7.01	61.10
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/23/16	4165	2.704	1.83	52.8	7.32	61.16
	04/20/16	ns	ns	ns	ns	ns	ns
MW-21	08/24/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/08/18	1840	1202	2.29	200.0	7.07	62.60
	08/24/17	2305	1638	1.80	71.6	7.09	63.95
	04/21/17	ns	ns	ns	ns	ns	ns
	08/23/16	1021	663	4.63	56.0	7.52	68.73
	04/20/16	ns	ns	ns	ns	ns	ns
MW-29	08/24/15	961	624	1.81	-16.0	7.49	61.70
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	1162	754	2.44	-48.3	7.10	63.32
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	1396	906	1.74	60.0	7.08	61.52
	04/24/13	ns	ns	ns	ns	ns	ns

TABLE 2Groundwater Field Parameter Summary2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/10/18	ns	ns	ns	ns	ns	ns
	04/18/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	3338	2168	5.17	-61.4	7.28	53.78
	08/23/16	2757	1784	4.05	-247.5	7.08	62.52
MW/ 20	04/21/16	3582	2329	2.19	-260.5	7.75	64.46
10100-30	08/24/15	3009	1957	1.79	-236.3	7.19	62.18
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	3218	2093	3.01	-211.8	6.82	64.46
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	2666	1733	1.54	-93.3	6.96	61.94
	04/24/13	2178	1	27.80	-34.5	7.00	61.00
	08/07/18	2797	1820	1.09	-143.8	7.08	65.40
	08/25/17	2647	1722	1.49	-63.1	7.25	62.60
	04/21/17	ns	ns	ns	ns	ns	ns
	08/22/16	3048	1983	2.11	7.8	8.10	63.37
	04/20/16	ns	ns	ns	ns	ns	ns
MW-31	08/24/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	2996	1948	2.97	-159.1	6.94	63.80
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	1776	1155	4.79	-120.7	7.15	63.92
	04/24/13	ns	ns	ns	ns	ns	ns
	08/10/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/20/16	ns	ns	ns	ns	ns	ns
MW-40	08/24/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/07/18	6072	3945	2.08	134.4	7.04	63.30
	08/24/17	2919	1974	2.00	-6.0	7.10	63.53
	04/21/17	ns	ns	ns	ns	ns	ns
	08/23/16	3460	2.253	5.87	-15.8	7.30	61.32
	04/20/16	ns	ns	ns	ns	ns	ns
MW-44	08/24/15	5750	3740	1.93	-97.8	7.26	61.28
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	5662	3679	3.09	54.1	6.86	61.16
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	5484	3564	3.60	-4.3	7.07	60.98
	04/24/13	ns	ns	ns	ns	ns	ns

 TABLE 2

 Groundwater Field Parameter Summary

 2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/08/18	5589	3581	1.33	187.2	6.77	61.90
	04/18/18	4916	3198	2.33	141.0	6.99	58.60
	08/24/17	4891	3180	2.10	180.0	6.88	62.00
	04/21/17	4912	3193	3.87	120.6	7.30	58.60
	08/22/16	5336	3469.000	2.81	109.6	7.63	60.04
MW-52	08/17/15	4172	2713	1.92	62.7	7.02	59.24
	08/19/14	4849	3153	3.37	64.2	6.49	60.50
	08/14/13	4471	2908	2.69	5.2	6.78	59.30
	08/15/12	3518	2286	2.60	4.7	6.61	64.70
	08/22/11	4139	3255	3.12	201.0	6.90	60.70
	08/13/10	3602	2801	0.63	291.0	7.07	62.20
	08/09/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/20/16	ns	ns	ns	ns	ns	ns
RW-01	08/24/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/01/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/20/16	ns	ns	ns	ns	ns	ns
RW-09	08/24/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/10/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/23/16	2472	1.601	6.48	-123.8	7.67	61.15
	04/20/16	ns	ns	ns	ns	ns	ns
RW-15	08/24/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	3458	2249	3.65	-111.1	6.84	61.94
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	2213	1439	1.33	-115.1	6.94	62.24
	04/24/13	ns	ns	ns	ns	ns	ns

 TABLE 2

 Groundwater Field Parameter Summary

 2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/10/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/23/16	3666	2.383	0.66	4.6	7.49	63.02
	04/20/16	ns	ns	ns	ns	ns	ns
RW-18	08/24/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/01/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/20/16	ns	ns	ns	ns	ns	ns
RW-23	08/24/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	8/8/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/01/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
RW-28	04/21/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/20/16	ns	ns	ns	ns	ns	ns
	08/10/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/24/16	2325	1.511	5.07	-228.7	7.60	64.02
	04/20/16	ns	ns	ns	ns	ns	ns
RW-42	08/24/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	08/08/13	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/01/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/24/16	2904	1888	2.10	-151.1	9.50	67.91
	04/20/16	ns	ns	ns	ns	ns	ns
RW-43	08/24/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/25/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	08/08/13	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns

### TABLE 2 Groundwater Field Parameter Summary 2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
Cross-Gradient W	ells						
	08/06/18	872	592	3.40	168.0	7.11	60.70
	04/18/18	796	520	2.91	102.7	7.19	53.20
	08/25/17	765	496	2.08	126.1	7.35	64.57
	04/20/17	827	538	3.01	233.4	7.99	57.65
	08/19/16	685	444	3.81	57.4	8.09	62.83
M/M/_01	04/21/16	863	561	3.57	32.3	8.41	56.24
10100-01	08/18/15	852	555	2.10	47.4	7.74	63.74
	04/20/15	992	646	4.80	86.9	7.62	55.40
	08/20/14	800	520	3.35	-2.2	7.11	63.38
	04/12/14	843	546	3.37	95.1	7.02	54.14
	08/13/13	717	466	4.13	61.6	7.42	61.58
	04/24/13	725	470	3.02	153.4	7.12	53.00
	08/06/18	4038	2620	0.90	170.6	7.07	62.30
	04/18/18	3556	2314	1.61	129.0	7.11	61.10
	08/25/17	3528	2294	1.81	114.7	7.10	62.03
MW-13	04/20/17	3561	2314	1.86	195.6	7.45	63.41
	08/19/16	3560	2314	2.30	84.7	7.84	62.51
	04/21/16	3698	2404	1.66	0.0	7.46	63.61
	08/18/15	3986	2591	1.99	28.8	7.28	65.12
	04/20/15	4588	2981	3.17	80.6	7.19	61.70
	08/20/14	4004	2602	3.43	54.6	6.90	64.28
	04/12/14	3932	2557	2.43	103.8	6.91	60.86
	08/13/13	3621	2353	2.52	98.7	7.03	63.08
	04/24/13	3340	2170	4.27	99.0	7.10	60.00
	08/02/18	ns	ns	ns	ns	ns	ns
	08/28/17	ns	ns	ns	ns	ns	ns
	04/20/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/21/16	ns	ns	ns	ns	ns	ns
MW-26	08/18/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/20/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	08/13/13	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/06/18	8295	5395	1.55	262.3	7.03	65.70
	08/28/17	5587	3633	1.28	-49.2	7.05	63.10
	04/21/16	ns	ns	ns	ns	ns	ns
	08/19/16	5598	3640	2.30	-122.5	7.79	60.80
	04/21/16	ns	ns	ns	ns	ns	ns
MW-27	08/18/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/20/14	6950	4518	3.55	21.8	6.71	61.94
	04/12/14	ns	ns	ns	ns	ns	ns
	08/13/13	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns

 TABLE 2

 Groundwater Field Parameter Summary

 2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/06/18	5818	3777	6.98	232.8	7.64	60.00
	08/28/17	4694	3055	7.20	144.6	7.44	64.10
	04/21/16	ns	ns	ns	ns	ns	ns
	08/19/16	5094	3309	6.86	77.7	8.32	58.73
	04/21/16	ns	ns	ns	ns	ns	ns
MW-32	08/18/15	5171	3363	8.00	41.5	7.71	60.50
	04/20/15	ns	ns	ns	ns	ns	ns
	08/20/14	5047	3280	10.08	50.9	7.32	60.20
	04/12/14	ns	ns	ns	ns	ns	ns
	08/13/13	4833	3142	8.73	87.2	7.55	58.88
	04/24/13	ns	ns	ns	ns	ns	ns
	08/06/18	5539	3601	2.55	2461.0	7.52	65.50
	04/18/18	5003	3243	3.32	145.0	7.58	59.50
	08/28/17	4947	3211	4.20	146.4	7.24	65.10
	04/20/17	5288	3439	5.64	180.0	7.91	60.19
	08/19/16	5280	3429	6.11	70.1	8.49	60.62
MM/ 00	04/22/16	ns	ns	ns	ns	ns	ns
10100-33	08/18/15	5594	3633	4.84	42.7	7.45	62.96
	04/20/15	6078	3950	7.37	76.4	7.76	60.08
	08/20/14	5097	3313	8.81	48.8	7.38	62.42
	04/12/14	5040	3276	10.24	88.2	7.69	59.36
	08/13/13	5621	3655	5.39	90.1	7.13	60.56
	04/24/13	4990	3240	34.33	32.6	7.75	58.00
Downgradient We	lls	•					
	08/06/18	3014	1956	3.69	-62.6	7.05	61.70
	08/29/17	2847	1850	1.48	-74.17	6.74	65.03
	04/20/16	ns	ns	ns	ns	ns	ns
	08/18/16	2203	1432	1.77	-61.3	7.66	64.99
	04/22/16	ns	ns	ns	ns	ns	ns
MW-11	08/19/15	2221	1443	2.28	-99.3	7.06	62.84
	04/20/15	ns	ns	ns	ns	ns	ns
	08/21/14	2098	1365	3.79	-120.7	6.63	66.14
	04/12/14	ns	ns	ns	ns	ns	ns
	08/12/13	2558	1664	9.08	-82.4	6.84	64.70
	04/24/13	ns	ns	ns	ns	ns	ns
	08/06/18	459.3	298	1.17	226.1	7.24	65.50
	04/18/18	1183	773	4.60	84.4	7.44	54.40
	08/28/17	405	2639	3.48	124.9	7.28	69.30
	04/20/17	633	411	4.26	151.3	7.99	53.78
	08/18/16	402	261	2.55	42.2	9.49	65.93
M\\/-12	04/22/16	653	425	5.62	49.5	8.33	55.28
	08/19/15	763	496	3.25	32.7	7.65	65.72
	04/20/15	691	449	6.54	84.8	7.67	51.74
	08/21/14	572	371	2.73	-30.2	7.15	68.18
	04/12/14	826	540	6.83	44.3	7.76	51.44
	08/12/13	569	370	4.98	24.7	7.45	63.68
	04/24/13	1089	710	43.92	172.4	7.47	49.00

TABLE 2
Groundwater Field Parameter Summary
2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/06/18	3240	2041	2.95	-35.1	7.11	63.90
	08/29/17	2853	1854	1.81	-84.3	7.03	63.13
	04/20/16	ns	ns	ns	ns	ns	ns
	08/18/16	2789	1814	2.05	-77.5	7.88	60.58
	04/22/16	ns	ns	ns	ns	ns	ns
MW-34	08/19/15	2289	1489	1.54	-110.8	7.26	60.80
	04/20/15	ns	ns	ns	ns	ns	ns
	08/21/14	1574	1023	2.40	-97.4	6.95	61.88
	04/12/14	ns	ns	ns	ns	ns	ns
	08/12/13	2270	1476	1.94	-89.3	7.03	62.12
	04/24/13	ns	ns	ns	ns	ns	ns
	08/06/18	2714	1762	1.16	-50.7	7.11	62.00
	04/18/18	2100	1365	1.19	-78.7	7.12	58.60
	08/29/17	2480	1610	1.55	-91.3	7.10	62.13
	04/20/17	2059	1337	1.97	-16.5	7.64	59.99
	08/18/16	2331	1515	1.97	-86.7	8.01	59.90
	04/22/16	2001	1300	1.69	-106.9	7.64	59.60
IVIVV-35	08/19/15	2116	1374	1.30	-103.4	7.28	60.32
	04/20/15	2054	1335	2.41	-70.2	7.37	58.40
	08/21/14	2140	1391	4.82	-106.3	7.05	61.16
	04/12/14	2157	1404	2.33	-73.7	6.97	58.16
	08/12/13	1955	1270	2.82	-92.4	7.03	61.22
	04/24/13	2193	1430	35.10	-43.0	6.98	57.00
	08/06/18	2717	1762	2.25	-50.4	7.35	63.90
	04/18/18	2200	1450	2.14	-63.2	7.59	58.90
	08/29/17	2855	1859	2.40	-106.7	7.36	63.25
	04/20/17	2296	1490	3.42	8.1	7.64	58.91
	08/18/16	2518	1635	3.31	-67.1	8.12	59.90
	04/22/16	ns	ns	ns	ns	ns	ns
10100-37	08/19/15	2417	1571	3.62	-118.1	7.61	60.50
	04/20/15	2730	1772	2.98	22.1	7.58	60.20
	08/21/14	2248	1460	4.60	-105.6	7.43	60.80
	04/12/14	2476	1608	3.83	-61.8	7.30	59.00
	08/12/13	2596	1686	5.09	-116.5	7.50	60.56
	04/24/13	1628	1060	35.95	-46.7	7.49	57.00
	08/06/18	1922	1248	2.20	-54.2	7.19	62.50
	04/18/18	1589	1034	1.37	-104.0	7.29	58.50
	08/29/17	1610	1047	2.00	-95.0	7.18	64.80
	04/20/17	1560	1014	2.37	34.9	8.06	59.48
	08/18/16	1085	705	3.11	-46.5	8.42	60.26
M/\/_38	04/22/16	ns	ns	ns	ns	ns	ns
10100-30	08/19/15	1171	761	2.01	-124.7	7.55	59.00
	04/20/15	1395	906	3.13	10.1	7.76	59.48
	08/21/14	1237	804	2.97	-112.6	7.47	60.32
	04/12/14	1537	999	3.73	-100.9	7.29	58.58
	08/12/13	1332	865	4.61	-122.2	7.24	61.28
	04/24/13	1656	1070	34.56	-48.0	7.28	56.00

### TABLE 2 Groundwater Field Parameter Summary 2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
RCRA Investigatio	n Wells						
	08/23/17	ns	ns	ns	ns	ns	ns
	08/23/16	590	0.383	4.99	-123.3	8.38	61.06
	08/17/15	ns	ns	ns	ns	ns	ns
	08/19/14	ns	ns	ns	ns	ns	ns
10100-50	08/14/13	544	353	1.73	55.0	7.44	60.98
	08/15/12	558	348	10.37	148.4	7.21	62.20
	08/22/11	650	453	6.12	183.0	6.70	59.50
	08/13/10	612	425	0.66	248.0	7.12	61.40
	08/03/18	652	423	1.57	214.1	7.25	60.80
	08/23/17	729	429	4.09	172.0	7.32	62.90
	08/23/16	1180	732	5.92	-38.6	7.67	62.12
	08/17/15	723	470	2.55	70.2	7.31	58.76
MW-51	08/19/14	779	507	3.06	25.6	7.07	62.18
	08/14/13	441	287	2.17	69.0	7.35	61.34
	08/15/12	557	362	2.58	116.8	7.57	62.90
	08/22/11	509	351	4.80	181.0	6.90	61.10
	08/13/10	664	459	0.52	273.0	7.12	63.10
	08/03/18	5438	3536	1.38	229.9	7.25	61.50
	08/23/17	5204	3395	1.43	189.4	7.28	60.40
	08/24/16	4393	2868	4.99	27.5	7.40	59.49
	08/17/15	5470	3556	2.31	96.0	7.14	59.78
MW-53	08/19/14	5333	3467	3.23	59.7	6.58	60.50
	08/14/13	4603	2990	3.05	48.3	7.15	59.72
	08/15/12	5477	3562	3.55	38.0	7.27	61.90
	08/22/11	4574	3658	3.63	215.0	6.90	59.60
	08/13/10	4288	3394	0.59	242.0	7.14	61.60
	08/09/18	ns	ns	ns	ns	ns	ns
MW-54	08/24/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	08/10/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	08/17/15	ns	ns	ns	ns	ns	ns
MW-55	08/19/14	ns	ns	ns	ns	ns	ns
	08/14/13	ns	ns	ns	ns	ns	ns
	08/15/12	ns	ns	ns	ns	ns	ns
	08/22/11	3001	2284	1.72	198.0	7.00	60.60
	08/13/10	3160	2440	1.28	277.0	6.85	61.10
	08/01/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	08/23/16	3032	1972	1.47	68.4	7.36	68.40
	08/17/15	ns	ns	ns	ns	ns	ns
MW-56	08/19/14	ns	ns	ns	ns	ns	ns
	08/14/13	ns	ns	ns	ns	ns	ns
	08/15/12	ns	ns	ns	ns	ns	ns
	08/22/11	ns	ns	ns	ns	ns	ns
	08/13/10	ns	ns	ns	ns	ns	ns
	08/17/15	ns	ns	ns	ns	ns	ns

TABLE 2Groundwater Field Parameter Summary2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/01/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	08/24/16	3066	1994	2.99	-149.0	7.42	65.61
	08/17/15	ns	ns	ns	ns	ns	ns
M\\/_57	08/19/14	ns	ns	ns	ns	ns	ns
10100-57	08/14/13	ns	ns	ns	ns	ns	ns
	08/15/12	ns	ns	ns	ns	ns	ns
	08/22/11	ns	ns	ns	ns	ns	ns
	08/13/10	ns	ns	ns	ns	ns	ns
	08/17/15	ns	ns	ns	ns	ns	ns
	08/10/18	ns	ns	ns	ns	ns	ns
	08/24/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	08/17/15	ns	ns	ns	ns	ns	ns
MW-58	08/19/14	ns	ns	ns	ns	ns	ns
	08/14/13	ns	ns	ns	ns	ns	ns
	08/15/12	ns	ns	ns	ns	ns	ns
	08/22/11	ns	ns	ns	ns	ns	ns
	08/13/10	2562	1928	1.68	279.0	6.95	65.30
	08/03/18	3000	1956	1.10	-59.7	6.92	64.00
	08/22/17	2649	1720	1.32	-74.5	6.99	63.50
	08/22/16	3241	2106	2.34	70.3	7.83	62.15
	08/17/15	3381	220	1.30	-112.3	7.16	62.48
MW-59	08/19/14	3488	2266	2.75	-121.2	6.90	62.90
	08/14/13	2876	1869	1.79	-91.1	7.09	63.95
	08/15/12	2867	1863	1.60	-85.9	7.10	63.10
	08/25/11	2423	1812	2.12	221.0	6.80	62.00
	08/13/10	2067	1523	0.61	287.0	6.90	62.40
	08/07/18	ns	ns	ns	ns	ns	ns
	08/22/17	4074	2653	3.41	169.5	7.15	64.50
	08/17/16	ns	ns	ns	ns	ns	ns
	08/17/15	ns	ns	ns	ns	ns	ns
MW-60	08/19/14	ns	ns	ns	ns	ns	ns
	08/14/13	ns	ns	ns	ns	ns	ns
	08/15/12	ns	ns	ns	ns	ns	ns
	08/25/11	3551	2743	1.78	200.0	7.00	62.60
	08/13/10	2567	1939	0.68	284.0	6.88	61.50
	08/02/18	ns	ns	ns	ns	ns	ns
MW-61	08/24/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	08/07/18	7891	5129	2.81	79.9	7.13	64.30
	08/23/17	7036	4569	2.06	50.8	7.00	62.90
	08/22/16	7905	5139	2.18	120.3	8.00	62.06
	08/17/15	7273	473	2.03	48.1	7.05	61.46
MW-62	08/19/14	7172	4663	6.36	44.5	6.87	63.02
	08/14/13	7051	4583	4.54	38.3	7.07	61.76
	08/15/12	7450	4843	4.75	125.4	6.95	61.40
	08/23/11	6247	5203	50' cord -didn't reach	189.0	7.00	60.50
	08/13/10	6458	5330	50' cord -didn't reach	297.0	6.93	62.40

 TABLE 2

 Groundwater Field Parameter Summary

 2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/08/18	4005	2605	6.99	154.5	6.99	65.20
	08/22/17	3530	2310	1.20	112.1	25.88	65.60
	08/17/15	4931	320	0.80	57.8	6.84	64.64
N/14/ 00	08/19/14	5282	3432	3.24	30.5	6.60	66.92
MW-63	08/14/13	5899	3835	1.39	62.1	6.83	65.39
	08/15/12	5374	3479	1.47	137.6	6.91	65.40
	08/24/11	3416	2651	1.71	238.0	6.60	63.90
	08/13/10	4764	3809	0.44	222.0	7.06	68.30
	08/08/18	6353	4128	5.94	1592.0	7.13	61.60
	08/22/17	3946	3866	5.29	154.6	6.95	65.77
	08/22/16	6658	4329	6.29	131.2	7.83	62.11
	08/17/15	6310	410	6.16	68.3	7.04	63.38
MW-64	08/19/14	6249	4060	9.15	67.1	6.94	64.52
	08/14/13	6049	3933	6.49	60.9	7.03	64.28
	08/15/12	6501	4186	4.90	121.2	7.12	65.40
	08/24/11	4989	4026	4.22	235.0	6.70	61.50
	08/13/10	5302	4279	4.59	251.0	7.06	65.50
	08/07/18	3172	4898	2.25	-80.4	7.03	68.00
	08/22/17	4861	3172	1.06	-64.9	7.05	65.90
	08/22/16	5228	3398	1.83	-21.8	7.75	63.32
	08/17/15	4861	316	1.83	-182.3	7.10	63.38
MW-65	08/19/14	4299	2795	3.57	-114.7	6.89	64.16
	08/14/13	4707	3059	1.80	-97.6	7.04	64.10
	08/15/12	5341	3458	1.09	-93.5	7.09	63.90
	08/22/11	2866	2189	0.55	169.0	7.10	63.00
	08/13/10	2787	2103	0.41	245.0	7.05	65.80
	08/02/18	ns	ns	ns	ns	ns	ns
MW-66	08/24/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	08/03/18	1977	1287	1.37	250.0	7.12	60.90
	08/23/17	1359	1040	1.60	143.8	7.17	63.13
	08/24/16	1078	714	5.87	5.4	7.52	59.79
MM 07	08/17/15	1320	860	2.71	73.0	7.24	59.48
IVIVV-67	08/19/14	1008	654	3.00	70.4	6.87	60.14
	08/14/13	876	570	2.39	59.7	7.12	59.60
	08/15/12	1309	849	2.48	221.9	6.96	59.70
	08/22/11	1017	712	1.17	170.0	7.00	58.70
	08/03/18	1431	930	1.53	208.0	7.03	60.90
	08/23/17	1190	762	2.10	174.9	7.06	52.67
	08/24/16	1210	785	5.45	29.0	7.71	62.18
	08/17/15	1257	819	2.36	69.8	7.30	62.42
10100-08	08/19/14	1135	737	3.56	52.4	6.97	63.32
	08/14/13	1053	685	3.31	84.5	7.19	61.04
	08/15/12	1114	724	7.85	197.6	6.82	61.20
	08/22/11	1150	809	0.91	218.0	7.00	60.90
	08/01/18	ns	ns	ns	ns	ns	ns
MW-69	08/24/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns

### TABLE 2Groundwater Field Parameter Summary2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/07/18	5598	3647	2.61	-24.6	6.92	66.20
	08/23/17	5387	3516	1.88	-69.6	6.79	62.60
MW-70	08/17/16	ns	ns	ns	ns	ns	ns
	08/17/15	6258	407	3.21	-49.5	6.89	60.68
	08/19/14	6088	3956	6.13	-65.3	6.81	63.44
North Boundary B	arrier Wells						
	08/09/18	1451	940	0.79	-57.2	6.76	67.3
	04/18/18	1123	728	1.57	-50.3	6.75	55.4
	08/28/17	886	576	1.46	-66.17	6.83	67.03
	04/27/17	911	593	3.47	-56.2	6.99	53.92
	08/17/16	878	570	2.84	47.78	6.91	70.55
014/0.00	04/19/16	571	371	1.84	-63.41	7.17	54.99
CVV 0+60	08/25/15	914	592	1.34	-94.9	7.04	68.54
	04/20/15	733	477	2.83	-80.2	7.54	58.58
	08/27/14	750	488	2.41	-121.1	6.70	69.44
	04/12/14	926	0.6023	6.30	-63.1	6.74	53.54
	8/7/2013	823	535	2.12	-73.6	6.88	66.62
	04/24/13	1098	70	60.05	17.8	6.82	50.00
	08/09/18	2815	1833	0.94	-216.9	7.40	67.10
	04/18/18	1679	1092	1.04	-81.3	7.61	56.10
	08/28/17	1989	1294	0.80	-254.4	7.20	69.60
	04/28/17	1759	1125	4.08	-211.4	7.43	53.95
	08/17/16	1511	982	1.35	44.3	7.25	68.40
CW 25+95	04/21/16	1721	1177	0.68	-222.0	7.87	62.24
	08/26/15	np	np	np	np	np	np
	04/20/15	1547	1008	1.95	-193 1	7.54	59.30
	04/12/14	1920	1 2480	13 42	-70.4	7 46	57 20
	04/24/13	1246	810	42.38	-118.2	7 44	53.00
	08/01/18	ns	ns	ns	ns	ns	ns
	04/18/18	ns	ns	ns	ns	ns	ns
	08/28/17	ns	ns	ns	ns	ns	ns
	04/27/17	np	np	np	np	np	np
	08/17/16	1208	785	1.15	22.9	7.55	70.00
<b></b>	04/19/16	ns	ns	ns	ns	ns	ns
OW 0+60	08/25/15	1014	659	1.03	-135.1	6.96	68 78
	04/20/15	ns	ns	ns	ns	ns	ns
	08/27/14	1056	687	2.00	-58.4	6.59	69.14
	04/12/14	ns	ns	ns	ns	ns	ns
	8/7/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/01/18	ns	ns	ns	ns	ns	ns
	04/18/18	ns	ns	ns	ns	ns	ns
	08/28/17	ns	ns	ns	ns	ns	ns
	04/27/17	np	qn	np	np	np	np
	08/17/16	1225	797	1.70	-96.7	7.40	70.41
014/4 50	04/19/16	758	493	1.65	-87.9	6.63	57.11
OVV 1+50	08/25/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/27/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	8/7/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns

TABLE 2Groundwater Field Parameter Summary2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/09/18	ns	ns	ns	ns	ns	ns
	04/19/18	2800	1846	1.42	-111.7	7.20	56.90
	08/28/17	ns	ns	ns	ns	ns	ns
	04/27/17	2355	1532	1.10	-18.7	7.41	13.05
	08/17/16	2776	1804	1.33	-215.3	7.09	67.70
01/1/21/95	04/19/16	2471	1606	1.84	-74.55	6.92	55.67
000 3+05	08/25/15	2522	1638	0.86	-263.9	7.15	67.16
	04/20/15	ns	ns	ns	ns	ns	ns
	08/27/14	ns	ns	ns	ns	ns	ns
	04/12/14	3030	1967	4.18	-143.6	6.93	54.74
	8/7/2013	ns	ns	ns	ns	ns	ns
	04/24/13	3021	1960	64.23	-112.5	7.15	52.00
	08/01/18	ns	ns	ns	ns	ns	ns
	04/18/18	ns	ns	ns	ns	ns	ns
	08/28/17	ns	ns	ns	ns	ns	ns
	04/27/17	np	np	np	np	np	np
	08/17/16	ns	ns	ns	ns	ns	ns
	04/15/16	ns	ns	ns	ns	ns	ns
010 5+50	08/25/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/27/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	8/7/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/01/18	ns	ns	ns	ns	ns	ns
	04/18/18	ns	ns	ns	ns	ns	ns
	08/28/17	ns	ns	ns	ns	ns	ns
0000+70	04/17/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/15/16	ns	ns	ns	ns	ns	ns
	08/09/18	ns	ns	ns	ns	ns	ns
	04/19/18	ns	ns	ns	ns	ns	ns
0\\/ 8+10	08/28/17	3663	2381	1.99	129.0	6.89	68.03
000 0+10	04/27/17	4183	2719	3.16	137.0	7.83	55.94
	08/17/16	ns	ns	ns	ns	ns	ns
	04/15/16	ns	ns	ns	ns	ns	ns
	08/09/18	ns	ns	ns	ns	ns	ns
	04/19/18	2233	1443	0.67	-85.1	7.09	59.80
	08/28/17	ns	ns	ns	ns	ns	ns
	04/27/17	2399	1558	2.78	67.6	7.56	55.99
	08/17/16	2171	1414	0.78	152.9	6.65	68.23
OW 11+15	04/19/16	1284	834	3.49	52.2	7.68	57.66
	08/25/15	2452	1593	0.86	-208.4	6.98	66.38
	04/20/15	2672	1738	1.34	-99.6	7.16	58.52
	08/27/14	2157	1402	1.73	-80.8	6.60	66.08
	04/12/14	ns	ns	ns	ns	ns	ns
	8/7/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns

 TABLE 2

 Groundwater Field Parameter Summary

 2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/01/18	ns	ns	ns	ns	ns	ns
	04/19/18	ns	ns	ns	ns	ns	ns
	08/28/17	ns	ns	ns	ns	ns	ns
	04/17/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
OW 14+10	04/15/16	ns	ns	ns	ns	ns	ns
	08/25/15	ns	ns	ns	ns	ns	ns
	04/20/15	ns	ns	ns	ns	ns	ns
	08/27/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	8/7/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/09/18	ns	ns	ns	ns	ns	ns
	04/19/18	4102	2665	1.02	-122.0	7.29	61.80
	08/28/17	ns	ns	ns	ns	ns	ns
	04/27/17	3481	2262	3.01	-26.6	7.32	57.43
	08/17/16	3749	2438	1.43	-249.4	7.77	69.32
014/40.00	04/19/16	2973	2334	2.80	-116.2	7.52	59.62
OW 16+60	08/25/15	3936	2557	0.77	-219.3	7.16	68.84
	04/20/15	4057	2635	1.65	-211.1	7.24	60.98
	08/27/14	3239	2106	1.55	-172.9	6.83	68.72
	04/12/14	1529	0.9945	4.24	-149.9	6.96	59.42
	8/7/2013	2497	1623	1.07	-74.8	6.91	67.04
	04/24/13	2770	1800	48.22	-13.1	7.01	56.00
	08/01/18	ns	ns	ns	ns	ns	ns
	04/18/18	ns	ns	ns	ns	ns	ns
	08/28/17	ns	ns	ns	ns	ns	ns
	04/27/17	np	np	np	np	np	np
	08/17/16	ns	ns	ns	ns	ns	ns
OW 19+50	04/15/16	ns	ns	ns	ns	ns	ns
	08/25/15	ns	ns	ns	ns	ns	ns
	08/27/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	8/7/2013	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	08/09/18	ns	ns	ns	ns	ns	ns
	04/19/18	3451	2243	2.43	114.5	7.15	57.40
	08/28/17	2840	1846	3.21	179.6	7.08	70.00
	04/28/17	3264	1875	7.90	123.8	6.28	54.37
	08/17/16	1913	1242	6.99	185.7	7.40	72.55
0.1/ 22+00	04/19/16	2205	1434	6.71	15.0	8.01	57.38
011 22700	08/25/15	3048	1983	3.28	18.1	7.41	67.88
	04/20/15	3102	2017	4.57	24.8	7.56	57.62
	08/27/14	3213	2089	3.42	3.0	6.87	67.28
	04/12/14	2444	1.5882	10.62	21.9	7.27	54.32
	08/27/14	3213	2089	3.42	3.0	6.87	67.28
	04/24/13	3056	1990	57.44	115.6	7.19	51.00

TABLE 2
Groundwater Field Parameter Summary
2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/09/18	2111	1372	1.20	207.8	7.32	70.10
	04/19/18	1939	1255	3.03	116.2	7.53	61.30
	08/28/17	ns	ns	ns	ns	ns	ns
	04/28/17	1860	1200	7.34	70.7	7.18	56.04
	08/17/16	1589	1036	1.89	-61.8	8.28	70.16
01/1/22 110	04/19/16	ns	ns	ns	ns	ns	ns
010 23+10	08/25/15	1676	1090	1.57	-83.5	7.36	68.78
	04/20/15	1985	1289	2.22	-102.5	7.50	58.76
	08/27/14	1681	1092	2.20	-125.4	7.05	67.82
	04/12/14	1517	0.9858	8.70	-39.4	7.36	57.92
	8/7/2013	2442	1588	5.11	43.3	7.08	65.42
	04/24/13	1498	1	46.47	83.8	7.11	55.00
	08/09/18	ns	ns	ns	ns	ns	ns
	04/18/18	ns	ns	ns	ns	ns	ns
	08/28/17	ns	ns	ns	ns	ns	ns
	04/28/17	np	np	np	np	np	np
	08/17/16	ns	ns	ns	ns	ns	ns
01/1/22+00	04/19/16	ns	ns	ns	ns	ns	ns
010 23+90	08/25/15	1396	908	3.50	-10.3	7.53	67.34
	04/20/15	1263	821	6.56	-1.9	7.74	59.36
	08/27/14	1522	990	2.53	-40.7	7.26	66.38
	04/12/14	1269	0.8255	13.05	22.3	7.58	59.18
	8/7/2013	1036	674	5.11	4.3	7.50	66.20
	04/24/13	1047	1	40.99	147.3	7.39	55.00
	08/09/18	2487	1612	1.98	26.0	7.12	69.90
	04/19/18	1354	877	2.00	-51.7	7.39	57.90
	08/28/17	2205	1432	1.76	-45.0	7.19	71.07
	04/28/17	2318	1340	6.99	-20.4	7.18	55.32
	08/17/16	1431	930	1.72	-73.8	8.08	69.59
	04/21/16	1947	1265	2.22	-72.8	8.24	57.56
011 23+70	08/25/15	1600	1040	1.62	-113.4	7.33	69.32
	04/20/15	1529	995	2.08	-110.0	7.32	56.96
	08/27/14	1531	997	2.21	-114.7	7.22	69.08
	04/12/14	1748	1137	6.29	-87.5	7.35	55.70
	8/7/2013	1309	852	2.44	-92.1	7.41	68.66
	04/24/13	1335	870	42.40	16.5	7.33	53.00
San Juan River Bl	uff						
	08/10/18	650	423	5.80	179.4	7.51	63.60
	04/20/18	820	619	6.52	181.2	7.45	61.10
	08/30/17	1111	722	6.76	180.0	7.41	70.00
	04/21/17	785	507	6.66	180.7	7.77	58.64
	08/17/16	ns	ns	ns	ns	ns	ns
	05/18/16	306	1989	6.78	94.9	6.25	55.22
Outfall No. 2	04/22/16	ns	ns	ns	ns	ns	ns
	08/26/15	ns	ns	ns	ns	ns	ns
	04/21/15	1064	693	9.80	4.4	7.98	51.80
	08/26/14	463	301	6.52	28.1	7.20	61.52
	04/12/14	742	481	7.53	88.6	7.36	48.92
	08/06/13	782	507	6.48	57.1	7.51	63.68
	04/24/13	520	340	31.59	151.4	7.38	49.00

TABLE 2Groundwater Field Parameter Summary2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/09/18	380	247	4.21	226.1	7.38	68.20
	04/20/18	437	277	5.29	190.9	7.25	55.90
	08/30/17	467	284	5.94	170.7	7.17	61.90
	04/21/17	820	533	5.77	144.7	7.90	56.30
	08/19/16	297	193	9.33	38.0	8.79	61.16
	05/18/16	306	1989	8.67	96.4	6.84	51.98
**Outfall No. 3	04/22/16	ns	ns	ns	ns	ns	ns
	08/26/15	307	199	7.84	23.7	7.87	60.02
	04/21/15	422	275	10.48	59.2	7.95	53.66
	08/26/14	307	200	10.63	55.3	7.84	56.72
	04/12/14	933	607	8.49	76.9	7.42	52.58
	08/06/13	354	230	7.55	87.0	7.53	60.98
	04/24/13	622	400	28.88	120.5	7.27	53.00
	08/30/17	ns	ns	ns	ns	ns	ns
	04/21/17	3245	2106	5.43	238.1	7.63	57.20
	08/19/16	ns	ns	ns	ns	ns	ns
	04/22/16	ns	ns	ns	ns	ns	ns
** 6 1	08/26/15	ns	ns	ns	ns	ns	ns
Seep 1	04/21/15	5072	3296	4.99	49.7	6.54	53.60
	08/26/14	3939	2559	5.62	51.4	7.40	61.04
	04/12/14	3507	2279	6.01	49.3	7.56	49.88
	08/06/13	2472	1606	132.62	48.5	7.72	67.04
	04/24/13	3982	2590	90.94	228.5	7.36	46.00
	08/30/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/19/16	ns	ns	ns	ns	ns	ns
	04/22/16	ns	ns	ns	ns	ns	ns
	08/26/15	ns	ns	ns	ns	ns	ns
**Seen 2	04/21/15	ns	ns	ns	ns	ns	ns
Seep 2	08/26/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	08/06/13	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	04/24/13	ns	ns	ns	ns	ns	ns
	03/18/12	ns	ns	ns	ns	ns	ns
	08/30/17	ns	ns	ns	ns	ns	ns
	04/21/17	ns	ns	ns	ns	ns	ns
	08/19/16	ns	ns	ns	ns	ns	ns
	04/22/16	ns	ns	ns	ns	ns	ns
**Seen 3	08/26/15	ns	ns	ns	ns	ns	ns
000000	04/21/15	ns	ns	ns	ns	ns	ns
	08/26/14	ns	ns	ns	ns	ns	ns
	04/12/14	ns	ns	ns	ns	ns	ns
	08/06/13	ns	ns	ns	ns	ns	ns
	04/24/13	4506	2930	99.98	217.0	7.76	44.00

 TABLE 2

 Groundwater Field Parameter Summary

 2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)	
	08/19/16			Seep no longer exists	6			
	04/22/16	ns	ns	ns	ns	ns	ns	
	08/26/15	ns	ns	ns	ns	ns	ns	
	04/21/15	ns	ns	ns	ns	ns	ns	
**Soon 4	08/26/14	ns	ns	ns	ns	ns	ns	
Seep 4	04/12/14	ns	ns	ns	ns	ns	ns	
	08/06/13	ns	ns	ns	ns	ns	ns	
	04/24/13	ns	ns	ns	ns	ns	ns	
	08/07/12	ns	ns	ns	ns	ns	ns	
	03/18/12	ns	ns	ns	ns	ns	ns	
	08/30/17	ns	ns	ns	ns	ns	ns	
**Seep 5	04/21/17	ns	ns	ns	ns	ns	ns	
	08/19/16	ns	ns	ns	ns	ns	ns	
	08/19/16			Seep no longer exists	6			
	04/22/16	ns	ns	ns	ns	ns	ns	
	08/26/15	ns	ns	ns	ns	ns	ns	
	04/21/15	ns	ns	ns	ns	ns	ns	
** 5	08/26/14	ns	ns	ns	ns	ns	ns	
Seep 6	04/12/14	8810	5727	13.46	105.2	7.24	44.84	
	08/06/13	28663	18631	90.40	153.6	6.68	66.26	
	04/24/13	9510	6180	129.16	219.0	7.07	42.00	
	08/07/12	ns	ns	ns	ns	ns	ns	
	03/18/12	7291	6851	12.60	121.6	7.61	48.02	
	08/19/16	Seep no longer exists						
	04/22/16	ns	ns	ns	ns	ns	ns	
	08/26/15	ns	ns	ns	ns	ns	ns	
	04/21/15	ns	ns	ns	ns	ns	ns	
**Soon 7	08/26/14	ns	ns	ns	ns	ns	ns	
Seep 7	04/12/14	ns	ns	ns	ns	ns	ns	
	08/06/13	ns	ns	ns	ns	ns	ns	
	04/24/13	ns	ns	ns	ns	ns	ns	
	08/07/12	ns	ns	ns	ns	ns	ns	
	03/18/12	ns	ns	ns	ns	ns	ns	
	08/19/16			Seep no longer exists	6			
	04/22/16	ns	ns	ns	ns	ns	ns	
	08/26/15	ns	ns	ns	ns	ns	ns	
	04/21/15	ns	ns	ns	ns	ns	ns	
** 5000 9	08/26/14	ns	ns	ns	ns	ns	ns	
Seeh o	04/12/14	ns	ns	ns	ns	ns	ns	
	08/06/13	ns	ns	ns	ns	ns	ns	
	04/24/13	ns	ns	ns	ns	ns	ns	
	08/07/12	ns	ns	ns	ns	ns	ns	
	03/18/12	ns	ns	ns	ns	ns	ns	

### TABLE 2Groundwater Field Parameter Summary2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/19/16			Seep no longer exists	6		
	04/22/16	ns	ns	ns	ns	ns	ns
	08/26/15	ns	ns	ns	ns	ns	ns
	04/21/15	ns	ns	ns	ns	ns	ns
	08/26/14	ns	ns	ns	ns	ns	ns
**Seep 9	04/12/14	5271	3.4255	12.90	43.9	7.73	43.10
	08/06/13	ns	ns	ns	ns	ns	ns
	04/24/13	5644	3670	136.90	214.3	7.35	35.00
	08/07/12	ns	ns	ns	ns	ns	ns
	03/18/12	3004	2841	7.62	139.4	7 64	47.48
	08/02/18	454	294	8.85	173.7	7.60	68 50
	04/20/18	360	235	9.70	181.1	8 30	59.90
	08/30/17	192	125	12.16	170.0	8.26	66 10
	04/21/17	382	2/8	0.21	182.0	8.60	55.22
	09/10/16	200	190	9.21	22.6	0.03 9.04	64.04
	04/22/16	290	109	0.90	22.0	0.94 ne	04.04
**Upstream	09/26/15	160	110	0.28	22.6	7 08	57.74
	00/20/15	F40	251	12.00	23.0	0.16	59.64
	04/22/15	540	301	13.00	54.2	0.10	30.04
	00/20/14	257	0.0010	10.74	115	0.1.4	115
	04/12/14	357	0.2310	12.74	45.3	0.14	45.30
	00/00/13	115	115	115	115	0.00	10.00
	04/24/13	370	240	21.89	168.2	8.20	49.00
	08/02/18	302	196	8.22	244.9	7.38	05.60
	04/20/18	319	200	7.98	181.1	7.92	61.10
	08/30/17	325	211	0.31	173.6	8.13	69.10
	04/21/17	437	284	8.34	263.4	8.85	61.52
	08/19/16	290	189	8.76	20.5	8.90	63.86
**Downstream	04/22/16	ns	ns	ns	ns	ns	ns
	08/26/15	315	205	9.81	14.7	8.13	57.20
	04/22/15	536	348	12.39	35.7	8.16	59.72
	08/26/14	ns	ns	ns 10.05	ns	ns	ns
	04/12/14	429	0.2791	16.35	82.1	1.67	45.14
	08/06/13	ns	ns	ns	ns	ns	ns
	04/24/13	419	270	20.80	193.9	8.20	51.00
	08/02/18	314	205	8.97	211.4	1.87	65.00
	04/20/18	320	210	8.25	201.5	8.03	60.10
	08/30/17	335	218	7.86	182.7	8.27	72.70
	04/21/17	314	204	1.11	230.9	8.49	59.72
	08/19/16	293	191	9.40	37.8	9.67	60.08
**North of MW-45	04/22/16	ns	ns	ns	ns	ns	ns
	08/26/15	ns	ns	ns	ns	ns	ns
	04/22/15	498	324	12.93	33.4	8.03	60.08
	08/26/14	ns	ns	ns	ns	ns	ns
	04/12/14	411	0.2671	13.48	83.8	8.05	45.14
	08/06/13	ns	ns	ns	ns	ns	ns
	04/24/13	360	230	20.40	214.3	8.39	50.00

TABLE 2 **Groundwater Field Parameter Summary** 2018 Groundwater Remediation and Monitoring Annual Report

Location ID	Date	Electrical Conductivity (uS/cm)	Total Dissolved Solids (mg/l)	Dissolved Oxygen (mg/l)	Oxidation Reduction Potential (mV)	рН	Temperature (°F)
	08/02/18	309	202	8.77	213.2	7.29	67.60
	04/20/18	340	219	7.95	207.5	8.45	62.30
	08/30/17	330	215	7.74	191.7	8.20	69.10
	04/21/17	490	319	8.74	269.6	8.66	60.62
	08/19/16	296	192	8.75	45.1	9.02	60.98
**North of MW-46	04/22/16	ns	ns	ns	ns	ns	ns
NOT IT OF 10107-40	08/26/15	ns	ns	ns	ns	ns	ns
	04/22/15	500	325	13.71	20.3	8.24	60.26
	08/26/14	ns	ns	ns	ns	ns	ns
	04/12/14	405	0.2633	12.30	90.4	8.12	44.96
	08/06/13	ns	ns	ns	ns	ns	ns
	04/24/13	368	240	20.90	213.5	8.40	51.00
Background Wells							
	08/01/18	ns	ns	ns	ns	ns	ns
	04/16/18	ns	ns	ns	ns	ns	ns
**M\\/_03	08/30/17	ns	ns	ns	ns	ns	ns
10100 000	04/18/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/22/16	ns	ns	ns	ns	ns	ns
	08/02/18	ns	ns	ns	ns	ns	ns
	04/16/18	ns	ns	ns	ns	ns	ns
**M\\/_05	08/30/17	ns	ns	ns	ns	ns	ns
10100-05	04/18/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/22/16	ns	ns	ns	ns	ns	ns
	08/02/18	ns	ns	ns	ns	ns	ns
	04/16/18	ns	ns	ns	ns	ns	ns
**M\\/_06	08/30/17	ns	ns	ns	ns	ns	ns
10100-00	04/18/17	ns	ns	ns	ns	ns	ns
	08/17/16	ns	ns	ns	ns	ns	ns
	04/22/16	ns	ns	ns	ns	ns	ns

### Notes:

ns = no sample

np = no purge parameters, low water volume
 \* = Field result was confirmed with field notes.
 \*\* = Discrete sample reading

Scre	eening			**RW-1			MM	4		<sup>1</sup> MW	-8		**RW-9			RW-	15			**RW-18	
. Le	evels		Aug-18	Aug-17	Aug-16	Aug-18	Aug-17	Aug-16	Aug-15	Apr-17	Aug-13	Aug-18	Aug-17	Aug-16	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16
Volatile Organic Compounds (ug/L)	~																				
1,1,1,2-Tetrachloroethane 5	5.74	(4)		;	1	1	1	< 1.0	< 1.0	;	< 1.0	:	:	1	1	1	< 10	< 20	1	1	1
1,1,1-Trichloroethane	60	(3)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20	1	1	1
1,1,2,2-Tetrachloroethane	10	(3)	1	1	1	1	1	< 2.0	< 2.0	1	< 2.0	1	1	1	1	1	< 200	< 40	1	1	1
1,1,2-Trichloroethane	5	(2)	:	1	1	1	1	< 1.0	< 1.0	1	< 1.0	:	:	1	1	1	< 10	< 20	1	1	1
1,1-Dichloroethane	25	(3)	:	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20	1	1	:
1,1-Dichloroethene	5	(3)	1	:	:	1	1	< 1.0	< 1.0	1	< 1.0	:	1	1	1	1	< 10	< 20	1	1	1
1,1-Dichloropropene	1		1	1	1	1	1	< 1.0	< 1.0	:	< 1.0	:	1	1	1	1	< 10	< 20	1	1	1
1.2.3-Trichlorobenzene	1		:	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 100	< 20	1	1	1
1,2,3-Trichloropropane 0	D.01	(4)	:	1	1	1	1	< 2.0	< 2.0	1	< 2.0		:		1	1	< 200	< 40	1	1	1
1,2,4-Trichlorobenzene	70	(2)	:	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	:	1	1	1	< 100	< 20	1	1	1
1,2,4-Trimethylbenzene	15	(1)	:	1	1	1	1	1.7	4.1	1	8.0	1	1	1	1	!	2100	650	1		:
1,2-Dibromo-3-chloropropane	0.2	(2)	:	:	1	1	1	< 2.0	< 2.0	1	< 2.0	:	:	1	1	1	< 200	< 40	:	1	:
1,2-Dibromoethane (EDB) 0	0.05	(2)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20	1	1	1
1,2-Dichlorobenzene	600	(2)	1	1	1	1	1	< 1.0	< 1.0	:	< 1.0	1	1	1	1	1	< 100	< 20	1	1	1
1,2-Dichloroethane (EDC)	5	(2)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20	1	1	1
1,2-Dichloropropane	5	(2)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20	:	1	1
1,3,5-Trimethylbenzene	12	(1)	:	1	1	1	1	< 1.0	< 1.0	1	2.0	1	1	1	1	1	200	92	1	1	1
1,3-Dichlorobenzene	1		:	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 100	< 20	1	1	1
1,3-Dichloropropane	370	(1)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20	1	1	1
1.4-Dichlorobenzene	75	(2)		1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 100	< 20	1		1
1-Methvlnaphthalene	11	(5)	1	1	1	1	1	22	21	1	< 4.0	1	1			1	< 400	< 80	1		
2,2-Dichloropropane			:	:	1	1	1	< 2.0	< 2.0	1	< 2.0	:	•	1	1	1	< 20	< 40	:		1
2-Butanone 5	5560	(4)	:	1	1	1	1	< 10	< 10	1	< 10	1	1	1	1	1	< 100	< 200	1	1	1
2-Chlorotoluene	240	(1)	:	1	1	1	1	< 1.0	< 1.0	!	< 1.0	1	:	1	1	1	< 100	< 20	:	:	1
2-Hexanone	1		1	1	1	1	1	< 10	< 10	1	< 10	:	1	1	1	1	< 100	< 200	1	1	1
2-Methylnaphthalene	36	(1)	1	1	1	1	1	35	37	1	< 4.0	:	1	1	1	1	< 400	95	:	1	1
4-Chlorotoluene	250	(1)	:	1	1	1	1	< 1.0	< 1.0	1	< 1.0	:	1	1	1	1	< 100	< 20	1	1	:
4-Isopropyltoluene	1		:	1	1	1	1	< 1.0	< 1.0	1	< 1.0	:	;	1	1	1	< 100	< 20	1	1	1
4-Methyl-2-pentanone	•		:	:	1	1	1	< 10	< 10	-	< 10	:	:	1	1	1	< 100	< 200	:	-	:
Acetone 14	4100	(4)	1	1	-	1	1	< 10	< 10	!	< 10	1	1	1	1	1	< 100	< 200			1
Benzene	5	(2)	:	-	-	-	-	37	210	< 1.0	< 1.0	1	1		-	-	1800	1200	:	!	ł
Bromobenzene	62	(1)	1	1	1	1	1	< 1.0	< 1.0	:	< 1.0	1	1	1	1	ł	< 100	< 20	:	:	1
Bromodichloromethane 1	1.34	(4)	:	1	-	1	1	< 1.0	< 1.0	:	< 1.0	1	1	1	1	1	< 10	< 20	:	1	ł
Bromoform	33	(2)	!	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	!	1	1	1	< 100	< 20	!	!	1
Bromomethane 7	7.54	(4)	1	1	1	1	1	< 3.0	< 3.0	1	< 3.0	1	!	1	1	1	< 30	< 60	-	-	1
Carbon disulfide	810	(4)	1	1	1	1	1	< 10	< 10	1	< 10	1	1	!	1	1	< 100	< 200	-		1
Carbon Tetrachloride	5	(2)	1	1	1	1	1	< 1.0	< 1.0	!	< 1.0	1	1	!	1	1	< 10	< 20	1	!	1
Chlorobenzene	100	(2)	!	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20	!	!	1
Chloroethane 20	0060	(4)	1	1	1	1	1	< 2.0	< 2.0	!	< 2.0	1	1	1	1	1	< 20	< 40	1	!	1
Chloroform	100	(3)	1	1	-	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20			1
Chloromethane 2	20.3	(4)	1	1	1	1	1	< 3.0	< 3.0	!	< 3.0	1	1	1	1	1	< 30	< 60	1	!	1
cis-1,2-DCE	70	(2)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	:	:	1	1	< 10	< 20	1	:	1
cis-1,3-Dichloropropene	4.7	(4)	1	1	1	1	1	< 1.0	< 1.0	!	< 1.0	1	1	!	1	1	< 10	< 20	1	!	1
Dibromochloromethane 1	1.68	(4)	!	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20	!	!	1
Dibromomethane	8.3	(1)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20	1	!	1
Dichlorodifluoromethane	197	(4)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	1	< 10	< 20	1	1	1
Ethylbenzene	200	(2)		1	1		1	2	17	< 1.0	1.2	1	1	1	1	-	2400	610	1	1	1

c							MIM			1							y			*014/40	
n	l avals	Source	A 10	1-W7	A.1.2. 4.6	A 40	- MINI	4. Aux 15	A.1.2. 4E	-MW	ð Aug 12	A~ 10	LVV-9	15	A 40	-VV7	31 2110	A 46	A~ 10	TW-10	A.1.2. 4.6
			Aug-10	Aug-17	ol-gue	Aug-10	/I-6ne	oi - Sun	ci-but	Apr-14	ci-but	oi -gue	JI-6ne	oi-gue	oi-gue	/I-fine	Aug-Io	ci-gua	oi-gue	I JI-6ne	oi-Sur
Hexacniorobutadiene	1.39	(4)		1	1	1	1	o.r >	0.1. >	1	0.1.	1	1		1	!	001. >	07.2	1	1	1
Isopropylbenzene	447	(4)	1	1	1	1	1	9	49	:	< 1.0	:	1	1	1	!	90	53	:	1	1
Methyl tert-butyl ether (MTBE)	143	(4)	-	1	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0	-	-	1	1	!	< 10	110	:	1	1
Methylene Chloride	5	(2)	1	1	1	1	1	< 3.0	< 3.0	:	< 3.0	:	-	1	1	!	< 30	< 60	:	1	:
Naphthalene	1.65	(4)	:	1	1	1	1	4	78	:	< 2.0	1	:	1	:	!	500	170	:	1	:
n-Butylbenzene			1	!	1	1	1	< 3.0	< 3.0	!	< 3.0	!	1	1	1	1	< 300	< 60	1	1	!
n-Propylbenzene			1	1	1	1	1	33	39	!	1.2	1	!		1	!	350	59		1	!
sec-Butylbenzene			1	!	1	1	1	5.7	7.7	:	< 1.0	1	1	1	1	!	< 100	< 20	:	1	!
Styrene	100	(2)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	1	1	1	!	< 10	< 20	1	1	1
tert-Butylbenzene			:	1	1	1	1	1.2	1.2	:	< 1.0	:	1	1	1	1	< 100	< 20	:	:	1
Tetrachloroethene (PCE)	S	(2)	:	1	1	1	1	< 1.0	< 1.0	:	< 1.0	:	1	1	1	!	< 10	< 20	:	1	1
Toluene	750	(3)	-	;	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0	-	1	1	1	1	18	740	1	:	ł
trans-1,2-DCE	100	(2)	1	1	1	1	:	< 1.0	< 1.0	!	< 1.0	:	:	:	;	:	< 10	< 20	:	1	:
trans-1,3-Dichloropropene	4.71	(4)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	:	:	:	1	< 10	< 20	:	1	:
Trichloroethene (TCE)	S	(2)	1	1	1	1	:	< 1.0	< 1.0	!	< 1.0	:	:	:	:	:	< 10	< 20	:	1	:
Trichlorofluoromethane	1136	(4)	1	1	1	1	1	< 1.0	< 1.0	1	< 1.0	1	:	:	:	1	< 10	< 20	:	1	:
Vinyl chloride	-	(3)	:	1	1	:	1	< 1.0	< 1.0	-	< 1.0	:	:	:	;	1	< 10	< 20	!	1	1
Xylenes, Total	620	(3)	1	1	1	1	1	7	1	< 1.5	3.6	1	1	1	1	1	1300	1000	1	1	1
Semi-Volatile Organic Compound	ds (ng/L):																				
1 2 4-Trichlorohanzana	202	(2)	1	1	1			!	1		1			1		!		!	:		:
1.2-Dichlorobenzene	600	(2)	1	:		:	;	:			:	:	:	1	:	1			:	:	1
1 3-Dichlorohenzene			1	1	1	1	1	1	1	1		1	1		1	1	1		1		:
1.4-Dichlorobenzene	75	(2)	:	1	1	:	1	:	1	1	1	:	:	1	:	1	1	1	1	1	1
1-Methvlnaphthalene	11	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1
2.4.5-Trichlorophenol	1170	(4)		1		:	:								1	:			1		
2.4.6-Trichlorophenol	11.9	(4)	1	1	1	1	1	1	1	1	1	;	1	1	1	1	1	1	1		1
2,4-Dichlorophenol	45.3	(4)	1	1	1	1	1	1	1	1		1	:	:	:	1	1	1	:		:
2,4-Dimethylphenol	354	(4)	1	1	1	1	;	1	1	1	1	:	:	1	1	;	1	1	:	1	1
2,4-Dinitrophenol	38.7	(4)	1	1	1	1	1	1	1	1	-	1	:	:	:	1	1		1	1	1
2,4-Dinitrotoluene	2.37	(4)	1	1	1	1	:	1	1	1	-	1	1	1	1	1	1	1	1	1	1
2,6-Dinitrotoluene	0.485	(4)	1	1	1	:	:	1	-	-	1	1	1	:	:	:	:	1	1	1	1
2-Chloronaphthalene	733	(4)	1	1	1	1	1	1	1	1	1	1	:	:	:	1	1		:	1	:
2-Chlorophenol	91	(4)	1	1	1	1	1	1	1	!	1	1	:	1	:	1	1	1	:	1	1
2-Methylnaphthalene	36	(1)	!	1	1	1	1	-	1	!	1	:	:	1	;	1	1	-	-	1	:
2-Methylphenol	930	(1)	1	1	-	:	1	1	-	!	-	1		-	:	1	1	1	!		:
2-Nitroaniline	190	(1)	1	!	1	1	1	1	1	!	1	!	1	1	1	1	1	1	1	1	!
2-Nitrophenol			1	1	1	1	1	1	1	:	1	1	!	1	:	:	1	1	:	1	1
3,3'-Dichlorobenzidine	1.25	(4)	1	!	1	1	1	1	1	!	1	!	1	1	1	1	!	1	1	1	!
3+4-Methylphenol	930	(1)	1	!	1	1	1	-	-	!	-	:	1	1	1	1	!	-	1	-	!
3-Nitroaniline			-	1	1	1	1	-	1		1	-	-	-	-	1	1	-		1	1
4,6-Dinitro-2-methylphenol	1.52	(4)	1	!	-		1	-	-	!	-	:	1	1	1	1	1	1	1	-	!
4-Bromophenyl phenyl ether			1	1	1	-	1	-	1		1	-	-	-		1	1	1	-	1	1
4-Chloro-3-methylphenol			1	1	1	:	1	1	1	-	-	!	1	1	:	:	1	1	1	1	ł
4-Chloroaniline	3.7	(2)	1	!	1	1	1	!	1	1	1	!	1	1	1	1	!	1	:	1	!
4-Chlorophenyl phenyl ether			1	:	1	1	1	!	-	!	1	:	:	1	1	-	!	!	!	-	:
4-Nitroaniline	38	(2)	1	1	1	1	1	1	-	!	1	:	:	1	1	1	1	!	!	1	:
4-Nitrophenol	•		1	;	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Acenaphthene	535	(4)	1	-	1	:	1	1	1	!	1	1	1	1	1	1	1	1	1	1	1
Acenanhthvlene			1	1		1	1	1	1	1	1	1	:	1	1	:	1	1	1	1	1

Ŭ	crooning			**DW_1			WW	V		1 AVAV	C		**D\\\_0			-M/D	4R			**DW/_10	
5	Levels	Source	A110-18	Aun-17	Διια-16	Aug-18		Aun-16	Aun-15		<u>Διια-13</u>	Aun-18		Διια-16	Aug-18		Διια-16	Aun-15	Aun-18		Διια-16
Aniling	130	(5)	ol -gur		oi-fine	ol-Sny	-Snc	oi-fine	CI-Bhy		ci-fine	oi-fine		ol-ĥny	ol-But		oi-Sny	CI-Bny	ol-fun		or -gur
Anthracene	1720	(7)		1			-												1		
Azobenzene	1.2	(2)	:	:	1	:	:	1	:		:	:	:		:	:			:	:	:
Benzo(a)anthracene	0.12	(4)	:	:	1	-	:	:				:	:		-	:	1		:	:	:
Benzo(a)pyrene	0.2	(2)	1	1	:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Benzo(b)fluoranthene	0.343	(4)	:	:	1	:	:	:	:	-	1	:	:	:	:	:	:	:	:	:	1
Benzo(g,h,i)perylene	•		!	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1
Benzo(k)fluoranthene	3.43	(4)	1	-	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1	1
Benzoic acid	75000	(1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Benzyl alcohol	2000	(1)	1	-	1	1	1	1	1	1	1	:	1	:	1	1	1	!	!	1	-
Bis(2-chloroethoxy)methane	59	(1)	1	:	1	1	1	1	1	1	1	1	1	:	1	1	1	1	:	1	:
Bis(2-chloroethyl)ether	0.137	(4)	1	1	1	1	1	1	1	1	1	1	:	1	1	1	1	1	1	1	1
Bis(2-chloroisopropyl)ether	9.81	(4)	1	1	:	:	;	-	1	1	1	1	1	:	1	-	1	:	:	1	1
Bis(2-ethylhexyl)phthalate	9	(2)	1	:	1	1	1	1	1	1	1	1	1	1	1	1	!	1	:	1	1
Butyl benzyl phthalate	160	(2)	1	:	-	1	1	1	1	1	1	:	1	:	1	1	!	!	!	-	-
Carbazole			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	:
Chrysene	34.3	(4)	1	:	:	:	1	1	1	-	1	1	1	:	-	1	1	1	1	1	1
Dibenz(a,h)anthracene	0.0343	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dibenzofuran			1	:	1	1	1	1	1	1	1	1	1	:	1	1	1	1	:	1	1
Diethyl phthalate	14800	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	:
Dimethyl phthalate			1	:	1	1	1	1	1	-	-	1	1	1	1	1	1	1	1	1	:
Di-n-butyl phthalate	885	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	I	-
Di-n-octyl phthalate	•		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ł	1
Fluoranthene	802	(4)	1	1		1	1	1	1	!	1	1	1	1	1	1	1	1	1	1	:
Fluorene	288	(4)	1	-	:	:	:	1	1	1	1	1	1	:	-	-	1	1	1	1	1
Hexachlorobenzene	0.0976	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	!	1	1	1	-
Hexachlorobutadiene	1.387	(4)	1	:	1	1	1	1	1	1	1	1	1	1	1	1	!	1	:	1	:
Hexachlorocyclopentadiene	50	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	!	!	!	1
Hexachloroethane	3.28	(4)	1	:	1	:	1	1	1	!	1	!	1	:	1	1	1	1	!	!	1
Indeno(1,2,3-cd)pyrene	0.343	(4)	-		-	:	1	1	-	!	1	1	:	-	1	1	1	1		1	1
Isophorone	781	(4)	1	!	1	1	1	1	1	1	1	1	1	1	1	1	1	1	;	1	1
Naphthalene	1.65	(4)	1	1	1	1	1	1	1	I	1	1	1	1	1	1	!	1	1	1	1
Nitrobenzene	1.4	(4)	1	1	1	1	1	1	1	1		1	1	1	1	1	!	1	!	:	:
N-Nitrosodimethylamine	0.0017	(4)	1	:	1	1	1	1	1	1	1	:	:	1	:	1	1	!	1	:	1
N-Nitrosodi-n-propylamine	0.11	(5)	-		1		1	1		!		1		1		1	1	1	1	1	:
N-Nitrosodiphenylamine	0.0049	(4)	1	:	1	:	1	1	1	1	1	!	1	1	1	:	1	1	1	1	!
Pentachlorophenol	170	(4)	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Phenanthrene	-	(4)	1	1	1		:	1		1		1	1	1		:	1	1	1	1	:
henol	09/9	(4)	1	:	1	1	1	1		1		:	:	1	:	1		!	:	:	1
ryrere		(+)		:	-	1			•	1	•		:	1	•		:	!	!	1	1
Pyridine	20	(1)	:	-	:	-	;	;	!	-	!	-	-	;	-	1	;	!	:	:	:
		10,								2	5						C L C				
	0.1	(0)			1				0.23 7EA	10.0	10.0								:	:	1
	NC7	(3)			•					77	200	-					<b>330</b>	<b>400</b>	:		
Dromido	-	(2)		:	1			00:0 >	<pre>&gt; 0.0</pre>	00.0	00.0						00.0 >	00:0 >	:	:	:
		()								00.0	00.0										
Dhomhorin	0	(3)	•		•		•	00:0 ×	, 0 E0	5 7 7 7	<mark>.</mark> Л.		:	1		•	00:0 ×	00:0 >	:	:	1
C 110501101 US		(3)						2.2.7	00	0.2 2	0.7						C.1 (				
Carbon Dioxide (CO.		6							1100	5	2						1200	1200			
										5 7	5 7										
	•		:	:	1	1	:	9/1L	1148	5	5	-	-	1	-		1248		:	:	
Bicarbonate (CaCO <sub>3</sub> )	•			1	1	1	1	1176	1148	31	31	!	1	1	1	1	1248	1221		1	1

TABLE 3	Terminal Wells Analytical Summary	2018 Groundwater Remediation and Monitoring Annual Report
---------	-----------------------------------	---

	Screening	Collico		**RW-1			MM	4		1 MW	8-		**RW-9			RW-	15			**RW-18	
	Levels	2001.00	Aug-18	Aug-17	Aug-16	Aug-18	Aug-17	Aug-16	Aug-15	Apr-17	Aug-13	Aug-18	Aug-17	Aug-16	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16
Total Metals (mg/L):																					
Arsenic	0.01	(2)	:	1	1	i	1	< 0.020	< 0.020	< 0.020	< 0.020	1		1	1	1	< 0.020	< 0.020	1	1	
Barium	2.0	(2)	;	-	1	1	-	2.5	7	0.021	0.021	-	:	1	1	1	1.4	1.5	!	1	
Cadmium	0.005	(2)	1	1	1	1	1	< 0.0020	< 0.0020	< 0.0020	< 0.0020	1	:	1	1	1	< 0.0020	< 0.0020	1	:	1
Chromium	0.05	(3)	1	-	1	i	:	0.071	< 0.0060	0.46	0.46	1	:	:	1	1	< 0.0060	< 0.0060	:	:	:
Lead	0.015	(2)	:	:	1	1	:	0.012	0.005	< 0.0010	< 0.0010	-	:	:	1	1	0.0085	< 0.0050	:	:	:
Selenium	0.05	(3)	!	1	1	i	1	< 0.050	< 0.050	0.084	0.084	1	:	1	1	1	< 0.050	< 0.050	1	:	1
Silver	0.05	(3)	1	;	1	1	1	< 0.0050	< 0.0050	< 0.025	< 0.025	-	:	1	1	!	< 0.0050	< 0.0050	:	1	-
Mercury	0.002	(3)	!	1	1	i	1	< 0.00020 <	0.00020	0.0012	0.0012	1	:	1	1	1	< 0.00020	< 0.00020	1	:	1
Dissolved Metals (mg/L):																					
Arsenic	0.01	(2)	:	1		1	1	< 0.020	< 0.020	< 0.0050	< 0.0050	1	:	1	1	1	< 0.020	< 0.020	-	:	
Barium	1.0	(3)	;	1	1	1	1	2.3	2.3	0.012	0.012	1	1	1	1	1	1.2	1.6	1	1	1
Cadmium	0.005	(2)	:		1	1	-	< 0.0020	< 0.0020	< 0.0020	< 0.0020	-	1	1	1	!	< 0.0020	< 0.0020	:	:	
Calcium	•		:	:	1	1	1	170	170	140	140	1	1	1	1	1	150	170	1	-	
Chromium	0.05	(3)	:	-	1	1	1	0.011	< 0.0060	0.019	0.019	-	1	1	1	1	< 0.0060	< 0.0060	:	:	
Copper	-	(3)	1	1	1	1	1	0.16	< 0.0060	0.0076	0.0076	1	1	1	1	1	0.0098	< 0.0060	1	:	1
Iron	-	(3)	!	1	1	i	1	43	6.2	2.5	2.5	1	:	1	1	1	12	48	1	:	1
Lead	0.015	(2)	;	1	1	1	1	0.014	0.0065	< 0.0010	< 0.0010	1	1	1	1	1	0.0077	< 0.0050	1	:	1
Magnesium			;	1	1	1	1	61	99	31	31	1	1	1	1	!	<b>4</b> 5	49	1	1	1
Manganese	0.2	(3)	;	1	1	1	1	8.6	3.5	2.7	2.7	1	:	1	1	1	3.1	m	1	:	1
Potassium			!	1	1	i	1	4.7	4.3	3.1	3.1	1	:	1	1	1	3.7	3.7	1	:	1
Selenium	0.05	(3)	1	1	1	i	1	< 0.050	< 0.050	0.04	0.04	1	1	1	1	1	< 0.050	< 0.050	1	1	1
Silver	0.05	(3)	;	1	1	i	1	< 0.0050 <	< 0.0050	< 0.0050	< 0.0050	1	1	1	1	1	< 0.0050	< 0.0050	1	1	1
Sodium			1	1	1	i	1	380	360	250	250	1	1	1	1	1	560	560	1	1	1
Uranium	0.03	(3)	1	1	1	1	1	< 0.10	< 0.10	0.001	0.001	1	1	1	1	1	< 0.10	< 0.10	1	1	-
Zinc	10	(3)	;	1	1	1	1	0.033	0.024	0.076	0.076	1	1	1	1	1	1.3	0.15	1	:	1
<b>Total Petroleum Hydrocarbons</b>	(mg/L):																				
Diesel Range Organics	0.0398	(9)		-		1		1.3	2.1	<0.20	<0.20				1	-	100	20		:	-
Gasoline Range Organics		I	!	-	1	1	1	6.1	14	0.083	0.083	-	1	1	1	1	<b>5</b> 3	16	1	1	-
Motor Oil Range Organics	0.0398	(9)	:	:	1			< 2.5	< 2.5	<2.5	<2.5	:		1	-	1	44	12		:	1

Notes:
(1) EPA - Regional Screening Levels (June 2017) -Tap Water
(2) EPA - Regional Screening Levels (June 2017) - MCL
(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less
(4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)
(5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds
(6) NMED groundwater screening level for unknown oil

ı \*

No screening level available
 Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time

= Analysis not required and/or well contains separate phase I

= Analytical result exceeds the respective screening level.

÷ \*\*

= 6/27/13 modification on FWGWM Plan to remove MW-8 and replace with MW-52. = Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase

	Screening			**MW-20			**MW-21			**RW-23		**RM	1-28		MM	-29	
	Levels	source	Aug-18	Aug-17 /	Aug-16	Aug-18	Aug-17	Aug-16	Aug-18	Aug-17	Aug-16	Aug-18	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15
Volatile Organic Compounds (u	g/L)																
1,1,1,2-Tetrachloroethane	5.74	(4)	!	1	-	-	-	-	1	1	1	-		< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	60	(3)	1	ł	1	:	1	1	1	I	1	I	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	10	(3)	1	1	1	-	:	-	:	1	1	-	-	< 2.0	< 2.0	< 2.0	< 2.0
1,1,2-Trichloroethane	5	(2)	1	1	1	1		-	1	1	1		:	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	25	(3)	1	1	1	1	-	-	1	1	1		:	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	(3)	1	ł	1	1	1	1	:	1	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene			:	1	:	1	-	:	:	1	-		:	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene			:	ł	1	1	1	:	:	1	:	1	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	0.01	(4)	:		1	1	1	1	:	1	1	1	1	< 2.0	< 2.0	< 2.0	< 2.0
1,2,4-Trichlorobenzene	70	(2)	1	1	1	1		:	1	1	1	1	:	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	15	(1)	1	1	1	1	1	1	1	1	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	0.2	(2)	1	1	1	1	1	1	1	1	1	-	1	< 2.0	< 2.0	< 2.0	< 2.0
1,2-Dibromoethane (EDB)	0.05	(2)	:	1	1	1		:	:	1	1	1	:	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	600	(2)	1	1	1	1	1	1	1	1	1	-	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane (EDC)	5	(2)	:		1	1	1	:	:	1	1	1	:	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	5	(2)	1	1	1	1	1	:	1	1	:	1	1	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	12	(1)	1	1	1	1	1	1	1	1	:	1	1	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene			1	1	1	1	1	1	1	1	:	-	1	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	370	(1)	!	1	1	1	1	1	1	1	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	75	(2)	1	1	1	1		1	1		1	1	:	< 1.0	< 1.0	< 1.0	< 1.0
1-Methylnaphthalene	11	(2)	1	1	1	:	1	1	:	1	1	1	1	< 4.0	< 4.0	< 4.0	< 4.0
2,2-Dichloropropane			1	1	1	1	-	1	1	1	1	-	1	< 2.0	< 2.0	< 2.0	< 2.0
2-Butanone	5560	(4)	1	1	1	1	1	1	:	1	1	1	1	< 10	< 10	< 10	< 10
2-Chlorotoluene	240	(1)	1	1	1	!	-	:	:	1	1		1	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			1	ł	1	1	-	1	:	1	1		!	< 10	< 10	< 10	< 10
2-Methylnaphthalene	36	(1)	1	1	1	1	-	1	-	1	1		1	< 4.0	< 4.0	< 4.0	< 4.0
4-Chlorotoluene	250	(1)	1	1	;	-	-	!	:	1	1		!	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	•		1	-	1	1	:	1	1	1	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0
4-Methyl-2-pentanone	•		1	1	1	1	1	1	1	1	1	1	1	< 10	< 10	< 10	< 10
Acetone	14100	(4)	1	1	1	1	1	1	1	1	1	!	1	< 10	2.2 J	< 10	< 10
Benzene	5	(2)	1	1	1	1	1	!	1	1	1	1	!	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	62	(1)	ł	1	1	1	:	1	1	1	1	-	:	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	1.34	(4)	1	1	1	1	1	1	1	1	1	-	1	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	33	(2)	1	1	1	1	1	1	1	1	1	!	1	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	7.54	(4)	1	1	1	1	-	1	1	1	1	-	1	< 3.0	< 3.0	< 3.0	< 3.0
Carbon disulfide	810	(4)	1	1	1	1		1	1	-	1		:	< 10	< 10	< 10	< 10
Carbon Tetrachloride	5	(2)	1	1	!	1	1	:	1	-	1		!	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	100	(2)	1	1	1	1	1	1	1	1	1	!	!	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	20900	(4)	1	1	1	1	1	1	1	-	1		!	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	100	(3)	1	1	1	1		1	1	1	1	1	!	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	20.3	(4)	1	1	1	1	1	1	1	1	1	1	:	< 3.0	< 3.0	< 3.0	< 3.0
cis-1,2-DCE	70	(2)	1	-	1	1	1	1	1	1	1	:	:	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	4.7	(4)	1	1	1	1	1	1	1	1	1	!	1	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	1.68	(4)	1	1	1	1		1	1	1	1		!	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	8.3	(1)	1	1	1	1	1	1	1	1	1		1	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	197	(4)	1	ł	1	1	1	1	1	1	1	:	1	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	700	(2)	1	1	1	1	1	;	1	1	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0

	Screening			UC-WW**			**MW-21			**RW-23		NA**	1-28		MM	-20	
~	Levels	Source	Διια-18	Aun-17	Διια-16	Aud-18	Aun-17	Aug-16	Aug-18	Aug-17	Διια-16	Aug-18	Aun-15	Aud-18		-22 Διια-16	Aug-15
Hexachlorobutadiene	1.39	(4)	n	- 				) 		- R i	- 			< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	447	(4)	1		1	1		1			1	1	1	< 1.0	< 1.0	< 1.0	< 1.0
Methyl tert-butyl ether (MTBE)	143	(4)	1	1	1	1	1	:	1	1	1	1	;	0.67 J	0.56 J	< 1.0	< 1.0
Methylene Chloride	5	(2)	-		1	:	-	-	1	-	1	-	1	< 3.0	< 3.0	< 3.0	< 3.0
Naphthalene	1.65	(4)	1	1	1	1	1	1	:	ł	1	1	1	< 2.0	< 2.0	< 2.0	< 2.0
n-Butylbenzene			1	1	!	1	1	1	:	1	1	1	1	< 3.0	< 3.0	< 3.0	< 3.0
n-Propylbenzene			1	1	1	1	1	1	:	ł	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene			1	-	-	1	1	-	-	1	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	100	(2)	1	1	!	!	1	!	:	1	;	-	1	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	•		1	1	1	1	1	1	1	1	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene (PCE)	5	(2)	1	1	1	1	-	:	1	:	1		1	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	750	(3)	-	-	1	1	-	-	1	-	1	-	1	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-DCE	100	(2)	1	1	1	1	;	:	1	1	1	-	1	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	4.71	(4)	1	1	1	:	1	1	1	1	;	1	1	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene (TCE)	5	(2)	1	1	1	:	1	-	:	1	:	-	-	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	1136	(4)	1	1	1	!	1	1	:	1	;	1	1	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl chloride	-	(3)	1	1	1	1	1	1	1	1	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes, Total	620	(3)	1	-	1	1	-	1	1	-	1	-	-	< 1.5	< 1.5	< 1.5	< 1.5
Semi-Volatile Organic Compour	:(T/gu) spu																
1,2,4-Trichlorobenzene	20	(2)	1	1	!	!	1	1	:	1	1	1	1	1	1	1	1
1,2-Dichlorobenzene	600	(2)	1		1	:		1			:	1	1	1	1	:	:
1,3-Dichlorobenzene	•		1	1	1	1	1	1	1		1	1	1	1	:	1	1
1,4-Dichlorobenzene	75	(2)	1	1	1	:	1	1	:	1	1	1	1	-	1	:	1
1-Methylnaphthalene	11	(2)	1	1	1	1	1	1	:	1	1	1	1		1	1	1
2,4,5-Trichlorophenol	1170	(4)	1	1	1	1	1	1	1	1	1	-	1	1	1	ł	1
2,4,6-Trichlorophenol	11.9	(4)	1	1	1	1	-	:	1	1	1		1	1	;	1	1
2,4-Dichlorophenol	45.3	(4)	1	1	1	1	1	1	1	1	1	-	1	1	1	1	1
2,4-Dimethylphenol	354	(4)	1	1	1	1	1	1	1	1	1	-	1	1	1	1	!
2,4-Dinitrophenol	38.7	(4)	1	1	1	1	1	1	1	1	:	-	1	1	1	1	!
2,4-Dinitrotoluene	2.37	(4)		1	-	1	-	1	!	:	!	-	1	1	ł	-	-
2,6-Dinitrotoluene	0.485	(4)	-	1	1	1	ł	!	!	1	1	-	!	!	;	1	!
2-Chloronaphthalene	733	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2-Chlorophenol	91	(4)	1	1	1	:	1	1	1	1	1	1	1	-	1	1	1
2-Methylnaphthalene	36	(1)	1	1	1	1	1	1	;	1	1	1	1	1	;	1	1
2-Methylphenol	930	(1)	1	1	1	!	1	1	:	1	1		1	1	1	I	1
2-Nitroaniline	190	(1)	1	1	!	1	1	1	1	1	1		1	1	1	:	1
2-Nitrophenol	•		1	1	1	1	1	1	1	1	1	1	1	1	1	1	-
3,3'-Dichlorobenzidine	1.25	(4)	1	1	1	1	1	1	;	1	1		1	1	1	1	1
3+4-Methylphenol	930	(1)	1	1	1	1	1	!	!	1	1	1	1	1	!	1	1
3-Nitroaniline	•		1	1	1	1	1	1	1	1	1		1	1	ł	I	1
4,6-Dinitro-2-methylphenol	1.52	(4)	1	1	1	1	1	1	1	1	1	1	1	1	ł	ł	1
4-Bromophenyl phenyl ether	•		1	1	!	1	1	1	:	1	1		1	1	ł	1	1
4-Chloro-3-methylphenol	•		1	1	!	1	1	1	:	1	1		1	1	1	I	1
4-Chloroaniline	3.7	(5)	1	1		1	1	1	:	1	1		1	1	1	1	1
4-Chlorophenyl phenyl ether	•		1	1	1	1	1	1	:	1	1		!	1	1	1	1
4-Nitroaniline	38	(2)	1	1	1	1	1	1	:	1	1		!	1	;	1	1
4-Nitrophenol	•		1	1	1	1		1	1	1	:		1	1	;	1	:
Acenaphthene	535	(4)							!				1	!	!	1	
Acenanhthylene				1	1	1	1		-	!	:	1	1	1	1	1	1

	Screening			UC-WW**			**MW-21			**DWL-22		NO**	-28		MM	- 20	
	Levels	Source	Aua-18	Aug-17	Aua-16	Aug-18	Aug-17	Aua-16	Aua-18	Aug-17	Aua-16	Aug-18	Aug-15	Aug-18	Aug-17	Aug-16	Aua-15
Aniline	130	(2)															
Anthracene	1720	(4)	1	1	1	:	1	1	:	1	1	1	1	1	1	1	1
Azobenzene	1.2	(5)	1	1	1	:	1	1	;	1	:	1	1	:	;	:	1
Benzo(a)anthracene	0.12	(4)	1	1	-	!		1	-	1	1	-		-	-	1	1
Benzo(a)pyrene	0.2	(2)	1	1	1	!	1	1	1	1	1	:	1	1	1	1	1
Benzo(b)fluoranthene	0.343	(4)	1	1	1	1	1	1	1	1	1	1	1	1	-	-	1
Benzo(g,h,i)perylene	•		1	1	1	!	1	!	:	1	:	:	1	:	:	:	1
Benzo(k)fluoranthene	3.43	(4)	:	1	1	!	1	1	:	1	:	1		1	1	1	1
Benzoic acid	75000	(1)	:	1	1	1	!	-	!	1	1	1	!	!	-	:	-
Benzyl alcohol	2000	(1)	1	1	1	1	I	1	1	1	1	!	!	1	1	1	1
Bis(2-chloroethoxy)methane	59	(1)	1	1	1	1	1	1	1	1	1	1	!	!	1	1	1
Bis(2-chloroethyl)ether	0.137	(4)	1	1	1	1	1	1	1	1	1	1	!	!	1	1	1
Bis(2-chloroisopropyl)ether	9.81	(4)	ł	1	1	!		1	1	1	ł	!	!	1	-	1	1
Bis(2-ethylhexyl)phthalate	9	(2)	:	-		-		1	:	-	1	1		:	:	1	1
Butyl benzyl phthalate	160	(2)	1	1	!	!	1	1	1	1	1	!	!	1	1	1	1
Carbazole			1	1	1	1	!	1	1	1	1	1	!	!	1	1	1
Chrysene	34.3	(4)	1	1	1	1	1	1	1	1	1	:	1	1	1	1	1
Dibenz(a,h)anthracene	0.0343	(4)	1	1	1	1	1	1	1	1	1	!	1	1	1	1	1
Dibenzofuran	•		:	1	1	1	1	1	1	1	:	1	1	1	!	ł	!
Diethyl phthalate	14800	(4)	1	1	1	1	1	1	1	I	1	1	1	1	1	1	1
Dimethyl phthalate	•		1	1	1	!	:	-	:	1	-	1	-	:	1	1	-
Di-n-butyl phthalate	885	(4)	1	1	1	1	:	-	:	ł	1	:		!	-	1	1
Di-n-octyl phthalate	•		1	1	1	!	!	1	1	1	1	:	-	!	1	1	
Fluoranthene	802	(4)	1	1	1	!	!	1	1	1	1	!	1	!	1	1	-
Fluorene	288	(4)	ł	-	-	!		1	1	-	1	!	!	!	-	1	-
Hexachlorobenzene	0.0976	(4)	1	1	1	1	!	1	1	1	-	!	1	!	1	1	-
Hexachlorobutadiene	1.387	(4)	1	-	-	1		1	1	-	1	1	!	!	1	1	-
Hexachlorocyclopentadiene	50	(4)	1	1	1	1	1	1	1	1	1	1	!	1	1	1	1
Hexachloroethane	3.28	(4)	ł	-	1	!	-	1	1	-	-	1	-	!	1	1	
Indeno(1,2,3-cd)pyrene	0.343	(4)	:	1		:	:	1	:	1	1	1		:	1	1	1
Isophorone	781	(4)	ł	1	1	!		1	1	1	ł	!	!	1	-	1	1
Naphthalene	1.65	(4)	1	1	1	1	1	-	1	-	1	-	!	1	1	1	ł
Nitrobenzene	1.4	(4)	1	1	!	!	1	:	:	1	1	;	1	:	:	:	1
N-Nitrosodimethylamine	0.0017	(4)	1	1	1	!	!	1	:	1	1	1	1	1	-	-	-
N-Nitrosodi-n-propylamine	0.11	(5)	:	1	1	1	1	1	:	1	:	1		!	:	1	1
N-Nitrosodiphenylamine	0.0049	(4)	1	1	1	1	1	1	1	1	1	!	1	!	1	1	1
Pentachlorophenol	170	(4)	:	1	1	1	1	1	!	1	:	1		1	I	1	1
Phenanthrene	-	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Phenol	5760	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pyrene	117	(4)	1	1	1	1	1	;	:	1	1	1	-	1	:	1	1
Pyridine	20	(1)	1	:	!	!	1	:	:	:	1	:	1	1	1	:	1
	4	10,															000
Fluoride	1.6	(3)	:		!	!		-	:	:	1	:	1	0:0>	0.22	0.32	0.26
	NCZ	(?) (č)		1			1			1	:	1	1	0LL	n L	<b>6</b>	<mark>3</mark>
Nitrite	-	(2)	1	1	1	:	:	1	:	1	1	1	1	1.7	< 0.10	< 0.10	< 0.10
Bromide	•		1	1	1	1	1	1	1	1	1	1	1	0.87	0.98	0.38	0.34
Nitrate	10	(3)	1	1	1	1	1	1	;	1	;	1	1	1.1	2.0	12	0.5
Phosphorus		Q	1	!	!	:	1	1	1	1	1	1	1	1.4 JH	< 0.50	< 0.50	< 0.50
Sulfate	600	(3)	1	1	!	:	1	1	;	1	;	1	1	320	300	180	160
Carbon Dioxide (CO <sub>2</sub> )	•		1	1	!	1	:	1	1	1	1	1	1	280	30	260	230
Alkalinity (CaCO <sub>3</sub> )	•		1	1	1	1	1	1	1	1	1	1	1	309.2	318.6	284.2	250.8
Bicarbonate (CaCO <sub>3</sub> )	•		:	1	1	1		:	-	1	1	1	1	309.2	318.6	284.2	250.8

Scree	ening <sub>c</sub>			**MW-20			**MW-21			**RW-23		**RW	-28		MM	-29	
. Lev	rels J		Aug-18	Aug-17	Aug-16	Aug-18	Aug-17	Aug-16	Aug-18	Aug-17	Aug-16	Aug-18	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15
Total Metals (mg/L):																	
Arsenic 0.0	01	(2)	:	1	1	:	1	1	1	1	1	1	1	0.0022	< 0.050	< 0.020	< 0.020
Barium 2.	0.	(2)	1	1	1	1	1	:	1	1	1	1	:	0.038	0.049	0.24	0.041
Cadmium 0.0	05	(2)	1	1	1	:	1	1	:	1	1	1	1	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Chromium 0.0	05	(3)	:	1	:	:	:	1	:	1	1	1	:	< 0.0060	< 0.0060	0.0088	< 0.0060
Lead 0.0	15	(2)	1	1	1	:	1	1	:	1	1	1	1	0.00031 J	< 0.0050	< 0.0050	< 0.0050
Selenium 0.0	05	(3)	:	1	:	:	:	1	:	1	1	1	:	0.0017	< 0.050	< 0.050	< 0.050
Silver 0.0	05	(3)	1		1	:	:	1	1	1	1	1	-	0.0036	< 0.0050	< 0.0050	< 0.0050
Mercury 0.0	02	(3)	1	1	1	:	1	1	1	ł	1	1	1	0.000085J	< 0.00020	< 0.00020	< 0.00020
Dissolved Metals (mg/L):																	
Arsenic 0.0	01	(2)	1	1	1	:	1	1	:	1	1	1	-	< 0.020	< 0.020	< 0.020	< 0.020
Barium 1.	0.	(3)	1	1	1	1	1	1	1	1	1	1	1	0.031	0.03	0.023	< 0.020
Cadmium 0.0	05	(2)	:	1	:	:	:	1	:	:	1	1	:	< 0.0020	< 0.0020	< 0.0020	< 0.0020
- Calcium -			1	1	1	:	1	1	:	1	1	1	1	130	130	8	74
Chromium 0.0	05	(3)	!	-	1	:	:	1	1	:	1	1	:	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Copper 1	_	(3)	1	1	1	:	1	1	1	1	1	1	-	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Iron 1		(3)	1	1	1	1	1	1	1	1	1	1	1	< 0.020	< 0.020	0.12	< 0.020
Lead 0.0	15	(2)	1	1	1	1	1	1	1	1	1	1	!	0.0053	< 0.0050	< 0.0050	< 0.0050
- Magnesium			1	1	1	:	1	1	1	1	1	1	1	30	58	18	17
Manganese 0.	.2	(3)	1	1	1	1	1	1	1	1	1	1	1	2.6	2.7	1.4	1.3
Potassium -			1	1	1	!	1	1	1	1	1	1	!	2.7	2.6	2.1	2.2
Selenium 0.0	05	(3)	1	1	1	1	1	1	1	1	1	1	!	< 0.050	< 0.050	< 0.050	< 0.050
Silver 0.0	05	(3)	-	1	-	1	1	1	1	1	1	1	!	< 0.0050	< 0.0050	< 0.0050	< 0.0050
- Sodium -			1	1	1	1	1	1	-	1	1	!	!	190	180	120	66
Uranium 0.0	03	(3)	-	1	-	1	1	1	1	1	1	1	!	< 0.10	< 0.10	< 0.10	< 0.10
Zinc 10	0	(3)					-	-	-		-	-		0.020	0.035	< 0.020	0.022
Total Petroleum Hydrocarbons (mg/L	L):																
Diesel Range Organics 0.03	398	(9)	-		-	:	:	-	1	1	1	1		< 0.40	< 0.20	0.28	< 0.20
Gasoline Range Organics	_		1	1	1	1	1	1	1	ł	1	1	1	0.024 J	< 0.050	< 0.050	< 0.050
Motor Oil Range Organics 0.03	398	(9)	1	1	1	:	1	1	:		-	1	-	< 2.5	< 2.5	< 2.5	< 2.5

 Notes:

 (1) EPA - Regional Screening Levels (June 2017) - Tap Water

 (2) EPA - Regional Screening Levels (June 2017) - MCL

 (3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

 (4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)

 (5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds

 (6) NMED groundwater screening level for unknown oil

 = No screening level available

•	
*	= Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
1	= Analysis not required and/or well contains separate phase
	= Analytical result exceeds the respective screening level.
-	= 6/27/13 modification on FWGWM Plan to remove MW-8 and replace with MW-52.
**	= Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate pha

	Apr-15		!	1	1	1	1	1	1	1	1	1	1	1	1	ł	1	1	1	1	1	ł	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1	1	:	1	1	1
	Aug-15		< 100	< 100	< 200	< 100	< 100	< 100	< 100	< 100	< 200	< 100	3000	< 200	< 100	< 100	< 100	< 100	740	< 100	< 100	< 100	< 400	< 200	< 1000	< 100	< 1000	< 400	< 100	< 100	< 1000	< 1000	4200	< 100	< 100	< 100	< 300	< 1000	< 100	< 100	< 200	< 100	< 300	< 100	< 100	< 100	< 100	< 100	4000
	Apr-16		1	ł	-	I	1	-	1	1	1	-	ł	1	1	1	1	1	1	1	1	ł	1	1	1	1	1	1	1	-	1	1	3000	1	1	1	1	1	1	-	1	-	1	1	1	1	1	1	4700
-30	Aug-16		< 100	< 100	< 200	< 100	< 100	< 100	< 100	< 100	< 200	< 100	4200	< 200	< 100	< 100	< 100	< 100	860	< 100	< 100	< 100	< 400	< 200	< 1000	< 100	< 1000	< 400	< 100	< 100	< 1000	< 1000	2700	< 100	< 100	< 100	< 300	< 1000	< 100	< 100	< 200	< 100	< 300	< 100	< 100	< 100	< 100	< 100	4400
MM	Apr-17		1	1	-	1	1	-	-	1	1	-	ł	!	1	1	1	1	1	!	1	ł	1	1	-	1	1	1	1	-	1	1	2900	!	1	1	1	1	1	-	1	-	-	1	1	1	1	1	5700
	Aug-17		1	1	-	1	1	-	-	1	1		1	!	:	!	!	!	-	!	!	1	!	!	-	1	1	1	1	-	1	1	!	!	:	!	!	!	!	-	-	-	-	1	1	1	1	1	;
	Apr-18		1	1	-	1	-		-	1	:		1	!	!	!	!	!	-	-	!	1	!	!	-	1	1	1	1		:	:	!	!	!	:	!	!	!		-		-	1	1	1	1	1	:
	Aug-18		1	1	1	1	1	1	1	1	:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1
Source	20 10 20	:	(4)	(3)	(3)	(2)	(3)	(3)			(4)	(2)	(1)	(2)	(2)	(2)	(2)	(2)	(1)		(1)	(2)	(2)		(4)	(1)		(1)	(1)			(4)	(2)	(1)	(4)	(2)	(4)	(4)	(2)	(2)	(4)	(3)	(4)	(2)	(4)	(4)	(1)	(4)	(2)
Screening	Levels	g/L)	5.74	60	10	S	25	5	•		0.01	70	15	0.2	0.05	600	5	5	12	I	370	75	11	I	5560	240		36	250	•	•	14100	5	62	1.34	33	7.54	810	5	100	20900	100	20.3	70	4.7	1.68	8.3	197	200
0)		olatile Organic Compounds (up	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane (EDB)	1,2-Dichlorobenzene	1,2-Dichloroethane (EDC)	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	1-Methylnaphthalene	2,2-Dichloropropane	2-Butanone	2-Chlorotoluene	2-Hexanone	2-Methylnaphthalene	4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone	Acetone	Benzene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-DCE	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene

Scree	ening vels	Source	Aug-18	Apr-18	Aug-17	MW Apr-17	-30 Aug-16	Apr-16	Aug-15	Apr-15
	39	(4)	1	:	1	:	< 100	1	< 100	1
4	47	(4)	1	1	1	1	190	1	110	1
14	43	(4)		1	-	< 100	< 100	< 100	< 100	
S	5	(2)	-	1	-	1	< 300	1	< 300	1
1.5	65	(4)	:	:	1	1	200	1	600	1
1			-	1	-	1	< 300	1	< 300	1
1			1	1	!	1	710	1	470	ł
1			1	1	1	1	< 100	1	< 100	ł
10	00	(2)	1	1	!	1	< 100	-	< 100	ł
1			-	1	-	1	< 100	1	< 100	1
Ω.	5	(2)	1	1	1	1	< 100	1	< 100	1
75	50	(3)	1	1	1	1000	1800	1300	13000	1
10	00	(2)	1	1	1	1	< 100	1	< 100	1
12	71	(4)	1	1	1	1	< 100	1	< 100	1
പറ	5	(2)	:	1	1	1	< 100	1	< 100	1
Ĩ	36	(4)	1	1	1	1	< 100	1	< 100	1
	-	(3)	1				< 100		< 100	1
3	20	(3)	1	1	1	17000	14000	13000	16000	1
3	(na/L):									
ř	202	(2)	:	1	1	1	1	1	1	!
100	00	(2)	1							1
			1							
Ē	5	(6)								
÷   ÷	) <del>-</del>	(2)	1							
- 1	- 4	(0)								
	2 4	(+)	1	1	:	1	1	•	•	1
=	۲. ۲.	(4)	!	1	1	1	1	1	1	1
42	5.3	(4)	1	1	1	1	1	1	1	1
35	54	(4)	1	1	1	1	1	1	1	1
38	8.7	(4)	1	1	1	1	1	1	1	ł
5	37	(4)	1	1	1	1	1	1	1	1
0.4	485	(4)	1	1	1	1	1	1	1	1
73	33	(4)	1	1	1	1	1	1	1	1
Ó	91	(4)	1	1	1	1	1	1	1	1
ň	36	(1)	1	1	1	1	1	1	1	1
6	30	(1)	1	1	1	1	1	1	1	1
19	06	(1)	1	1	1	1	1	1	1	1
1			1	1	1	1	1	1	1	1
1	25	(4)	1		1					
633	30	(1)	1							
S	3	\.\								
	, <u>c</u>	141	1	1	1	•	1		•	
	70	(4)	1	1	1	1	1	1	1	1
1			!	1	1	1	1	1	1	ł
'			!		!		1	1	1	ł
с.	.7	(5)	1	1	1	1	1	1	1	1
1			1	1	1	1	1	1	1	I
ñ	88	(2)	1	1	1	1	1	1	ł	1
1			1	1	1	1	1	1	1	1
53	35	(4)	-	1	1	:	:		-	1
1			1	1	1	:	:	1	1	1
l										

Sci -	reening	Source				MM	-30			
	evels	į	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Aniline	130	(2)	1	1	1	1	1	1	1	1
Anthracene	1720	(4)	1	1	1	1	1	1	1	!
Azobenzene	1.2	(2)	1	!	1	1	1	1	1	1
Benzo(a)anthracene	0.12	(4)	1	1	1	1	1	1	1	1
Benzo(a)pyrene	0.2	(2)	1	1	1	1	1	ł	I	1
Benzo(b)fluoranthene (	0.343	(4)	1	1	1	1	1	1	ł	1
Benzo(g,h,i)perylene			1	1	1	1	1	ł	I	
Benzo(k)fluoranthene	3.43	(4)	1	1		1		1	1	1
Benzoic acid 7	75000	(1)	1	1	1	1	1	ł	I	1
Benzyl alcohol	2000	(1)	1	1	1	1	1	1	1	
Bis(2-chloroethoxy)methane	59	(1)	1	1	1	1		1	1	1
Bis(2-chloroethyl)ether (	0.137	(4)	1	1	1	1	1	1	1	
Bis(2-chloroisopropyl)ether	9.81	(4)	1	1	1	1	1	:	1	
Bis(2-ethylhexyl)phthalate	9	(2)	1	1	1	1	1	:	1	1
Butyl benzyl phthalate	160	(2)	1	1	1	1	1	1	I	1
Carbazole			1	1	1	1	1	1	1	
Chrysene	34.3	(4)	1	1	1	1	1	:	1	
Dibenz(a,h)anthracene 0	0.0343	(4)	1	1	1	1	1	1	1	
Dibenzofuran			1	:	1	1	1	1	1	1
Diethyl phthalate 1	14800	(4)	1	1	1	1	1	1	1	1
Dimethyl phthalate			1	1	1	1	1			1
Di-n-butyl phthalate	885	(4)	1	1	1	1	1	1	1	1
Di-n-octyl phthalate			1	1	1	1	1	1	1	!
Fluoranthene	802	(4)	1	:	:	1		1	1	1
Fluorene	288	(4)	1	1	1	1	!	ł	1	ł
Hexachlorobenzene 0	0.0976	(4)	!	1	1	1	!	1	1	ł
Hexachlorobutadiene	1.387	(4)	1	1	1	1	1	1	ł	1
Hexachlorocyclopentadiene	50	(4)	1	1	:	1	1	1	1	:
Hexachloroethane	3.28	(4)	1	1	1	1	1	1	I	1
Indeno(1,2,3-cd)pyrene (	0.343	(4)	1	1	1	1	1	1	1	:
Isophorone	781	(4)	1	1	1	1	1	1	I	1
Naphthalene	1.65	(4)	1	1	1	1	1	1	1	
Nitrobenzene	1.4	(4)	1	1	1	1		:	1	1
N-Nitrosodimethylamine 0	0.0017	(4)	ł	1	1	1	!	1	1	1
N-Nitrosodi-n-propylamine	0.11	(2)	1	1	1	1	1	-	-	1
N-Nitrosodiphenylamine 0	0.0049	(4)	1	1	1	1	1	ł	1	1
Pentachlorophenol	170	(4)	1	1	1	1	1	:	1	1
Phenanthrene	-	(4)	1	1	1	-	1	1	1	1
Phenol	5760	(4)	1	1	1	1	1	1	1	!
Pyrene	117	(4)	1	1	1	1	1	1	1	1
Pyridine	20	(1)	1	1	:	:	1	ł	1	1
General Chemistry (mg/L):										
Fluoride	1.6	(3)	1	!	1	1	< 0.50	1	< 0.10	1
Chloride	250	(3)	1	1	1	1	230	1	230	;
Nitrite	-	(2)	1	1	:	1	< 0.50	1	< 2.0	:
Bromide			1	!	1	1	3.8	1	< 0.10	1
Nitrate	10	(3)	:	1	1	1	< 0.50	:	-	1
Phosphorus			:	1	:	1	< 2.5	-	< 0.50	!
Sulfate	600	(3)	1	1	1	1	69	1	36	1
Carbon Dioxide (CO <sub>2)</sub>	ı		ł	ł	ł	ł	1300	ł	1400	ł
Alkalinity (CaCO <sub>3</sub> )			1	1	:	1	1403	1	1493	1
Bicarbonate (CaCO <sub>3</sub> )				1	1		1403		1493	

Screen	puin					MM	-30			
Leve .	sis Sc	ource	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Total Metals (mg/L):										
Arsenic 0.01	1	(2)		-			< 0.020	-	< 0.020	1
Barium 2.0		(2)	1	1	1	1	0.74	1	1.1	1
Cadmium 0.00	15	(2)	!	:	1	1	< 0.0020	1	< 0.0020	1
Chromium 0.05	2	(3)	1	1		1	0.01	ł	< 0.0060	1
Lead 0.01	5	(2)	-	:	1	-	0.019	1	< 0.0050	1
Selenium 0.05	2	(3)	-	1		1	< 0.050	ł	< 0.050	1
Silver 0.05	2	(3)	1		-	1	< 0.0050	1	< 0.0050	1
Mercury 0.00	12	(3)					< 0.00020	-	< 0.00020	
Dissolved Metals (mg/L):										
Arsenic 0.01	1	(2)	-	1	-	1	< 0.020	1	< 0.020	1
Barium 1.0		(3)	1		-	1	0.56	1	-	1
Cadmium 0.00	15	(2)	-	1		1	< 0.0020	ł	< 0.0020	1
Calcium -			1	1	1	1	150	1	160	1
Chromium 0.05	2	(3)	:	:	1	1	< 0.0060	1	< 0.0060	1
Copper 1		(3)	!	1	1	ł	< 0.0060	ł	< 0.0060	I
Iron 1		(3)	1	1	1	ł	7.4	ł	1.5	1
Lead 0.01	5	(2)	!	1	1	1	0.0066	ł	0.0074	I
Magnesium -			-	1		1	36	ł	52	1
Manganese 0.2		(3)	!	1	1	1	1.2	ł	2.9	I
Potassium -			!	1	1	!	3.3	1	3.5	1
Selenium 0.05	2	(3)	!	1	1	!	< 0.050	1	< 0.050	1
Silver 0.05	2	(3)	•	1	-	:	< 0.0050	1	< 0.0050	1
Sodium -			!	1	1	!	590	1	560	1
Uranium 0.00	e	(3)	:	1	:	1	< 0.10	1	< 0.10	1
Zinc 10		(3)	-				0.031	-	0.034	
Total Petroleum Hydrocarbons (mg/L)	:									
Diesel Range Organics 0.036	98	(9)	-	-	-		11	-	7.7	-
Gasoline Range Organics -			:	1	:	1	100	1	120	1
Motor Oil Range Organics 0.036	98	(6)	1	1	:	1	< 25	1	< 2.5	1

																!					
0	Screening Levels	Source	A110-10	MW.	-31 ^	Aur. 15	A110-18	- MM	10 Aur-16	A114-15	A110-10	RW-42	Aug16	A112-18	RW 8	-43 ^!! </th <th>A110-15</th> <th>A114-18</th> <th>MW</th> <th>44 ^16</th> <th>A1121-15</th>	A110-15	A114-18	MW	44 ^16	A1121-15
Volatile Organic Compounds (ug	g/L)		o Bru	- Bru	o Bru	o Rou	o Rou	- Rou	o Rol	o- Rou	o Bru	- Back	o- Rnu	o Rav	- Bru	o. Rou	o- Rou	o- Roy	- Roci	o Bru	o Bou
1,1,1,2-Tetrachloroethane	5.74	(4)	< 10	< 10	< 10	< 20			< 50	1	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,1,1-Trichloroethane	60	(3)	< 10	< 10	< 10	< 20	1	:	< 50	:	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,1,2,2-Tetrachloroethane	10	(3)	< 20	< 20	< 20	< 40		:	< 100	:	-	1	< 20	:	-	< 100	:	< 2.0	< 2.0	< 2.0	< 4.0
1,1,2-Trichloroethane	5	(2)	< 10	< 10	< 10	< 20	1	!	< 50	1	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,1-Dichloroethane	25	(3)	< 10	< 10	< 10	< 20	!	:	< 50		1	-	< 10	1	1	< 50	-	< 1.0	< 1.0	< 1.0	< 2.0
1,1-Dichloroethene	5	(3)	< 10	< 10	< 10	< 20	1	1	< 50	1	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,1-Dichloropropene	•		< 10	< 10	< 10	< 20	1	1	< 50	1	1	1	< 10	1	1	< 50	:	< 1.0	< 1.0	< 1.0	< 2.0
1,2,3-Trichlorobenzene	•		< 10	< 10	< 10	< 20	!	1	< 50	:	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,2,3-Trichloropropane	0.01	(4)	< 20	< 20	< 20	< 40	1	1	< 100	1	1	1	< 20	1	1	< 100	:	< 2.0	< 2.0	< 2.0	< 4.0
1,2,4-Trichlorobenzene	70	(2)	< 10	< 10	< 10	< 20	!	1	< 50	:	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,2,4-Trimethylbenzene	15	(1)	940	230	600	1700	1	1	< 50	1	1	1	120	1	1	770	1	< 1.0	< 1.0	1:1	< 2.0
1,2-Dibromo-3-chloropropane	0.2	(2)	< 20	< 20	< 20	< 40	1	:	< 100	:	1	1	< 20	1	1	< 100	1	< 2.0	< 2.0	< 2.0	< 4.0
1,2-Dibromoethane (EDB)	0.05	(2)	< 10	< 10	< 10	< 20	1	1	< 50	1	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,2-Dichlorobenzene	600	(2)	< 10	< 10	< 10	< 20	1	:	< 50	:	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,2-Dichloroethane (EDC)	5	(2)	< 10	< 10	< 10	< 20	1	1	< 50	1	1	1	< 10	1	1	< 50	:	< 1.0	< 1.0	< 1.0	< 2.0
1,2-Dichloropropane	5	(2)	< 10	< 10	< 10	< 20	!	1	< 50	:	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,3,5-Trimethylbenzene	12	(1)	24	1.4 J	< 10	82	1	1	< 50	1	1	1	13	1	1	180	1	< 1.0	< 1.0	< 1.0	< 2.0
1,3-Dichlorobenzene	•		< 10	< 10	< 10	< 20	!	1	< 50	:	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,3-Dichloropropane	370	(1)	< 10	< 10	< 10	< 20	1	1	< 50	1	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
1,4-Dichlorobenzene	75	(2)	< 10	< 10	< 10	< 20	1	1	< 50	1	:		< 10	1	1	< 50	:	< 1.0	< 1.0	< 1.0	< 2.0
1-Methylnaphthalene	11	(2)	45	19 J	41	< 80	1	1	< 200	1	1	1	160	1		< 200	:	< 1.0	< 1.0	< 4.0	< 8.0
2,2-Dichloropropane	•		< 20	< 20	< 20	< 40	1	1	< 100	1	1	1	< 20	1	1	< 100	1	< 1.0	< 1.0	< 2.0	< 4.0
2-Butanone	5560	(4)	< 100	< 100	< 100	< 200	1	1	< 500	1	1	1	< 100	1	1	< 500	1	< 10	< 10	< 10	< 20
2-Chlorotoluene	240	(1)	< 10	< 10	< 10	< 20	1	:	< 50	:	:	1	< 10	1	:	< 50	:	< 10	< 10	< 1.0	< 2.0
2-Hexanone	•		< 100	< 100	< 100	< 200	1	1	< 500	1	1	1	< 100	1	1	< 500	1	< 1.0	< 1.0	< 10	< 20
2-Methylnaphthalene	36	(1)	45	12	< 40	96	:	:	< 200	1	1	1	220	1	1	< 200	:	< 1.0	< 1.0	< 4.0	< 8.0
4-Chlorotoluene	250	(1)	< 10	12 J	< 10	< 20	1	1	< 50	1	1	1	< 10	1	1	< 50	:	< 1.0	< 1.0	< 1.0	< 2.0
4-lsopropyltoluene	•		3.1 J	< 10	< 10	< 20	1	1	< 50	1	1	1	< 10	1	1	< 50	:	< 1.0	< 1.0	< 1.0	< 2.0
4-Methyl-2-pentanone	•		< 100	< 100	< 100	< 200	1	:	< 500	:	1	1	< 100	1	1	< 500	:	< 3.0	< 3.0	< 10	< 20
Acetone	14100	(4)	< 100	< 100	< 100	< 200	1	1	< 500	1	1	1	< 100	1	1	< 500	1	< 10	< 10	< 10	< 20
Benzene	5	(2)	1500	320	270	3900	-		< 50		-	-	6300	-	!	2600	-	< 1.0	< 1.0	< 1.0	< 2.0
Bromobenzene	62	(1)	< 10	< 10	< 10	< 20	!	:	< 50	!	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
Bromodichloromethane	1.34	(4)	< 10	< 10	< 10	< 20	!	1	< 50	1	1	ł	< 10	1	1	< 50	1	< 2.0	< 2.0	< 1.0	< 2.0
Bromoform	33	(2)	< 10	< 10	< 10	< 20	1	:	< 50	1	1	1	< 10	1	!	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
Bromomethane	7.54	(4)	< 30	< 30	< 30	< 60	!	:	< 150	1	1	1	< 30	1	1	< 150	1	< 3.0	< 3.0	< 3.0	< 6.0
Carbon disulfide	810	(4)	< 100	< 100	< 100	< 200	!	:	< 500	:	1	1	< 100	!	!	< 500	-	< 1.0	< 1.0	< 10	< 20
Carbon Tetrachloride	5	(2)	< 10	< 10	< 10	< 20	!	:	< 50	1	1	1	< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
Chlorobenzene	100	(2)	< 10	< 10	< 10	< 20	!	:	< 50	:	1	1	< 10	!	!	< 50	-	< 1.0	< 1.0	< 1.0	< 2.0
Chloroethane	20900	(4)	< 20	< 20	< 20	< 40	!	:	< 100	:	1	1	< 20	!	!	< 100	1	< 1.0	< 1.0	< 2.0	< 4.0
Chloroform	100	(3)	< 10	< 10	< 10	< 20	!	:	< 50	1	:	1	< 10	1	!	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
Chloromethane	20.3	(4)	< 30	< 30	< 30	< 60	!	:	< 150	:	1	1	< 30	!	!	< 150	1	< 1.0	< 1.0	< 3.0	< 6.0
cis-1,2-DCE	70	(2)	< 10	< 10	< 10	< 20	!	:	< 50	:	1	1	< 10	!	!	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
cis-1,3-Dichloropropene	4.7	(4)	< 10	< 10	< 10	< 20	!	1	< 50	!	1	1	< 10	1	1	< 50	-	< 1.0	< 1.0	< 1.0	< 2.0
Dibromochloromethane	1.68	(4)	< 10	< 10	< 10	< 20	!	:	< 50	:	1	1	< 10	!	!	< 50	-	< 1.0	< 1.0	< 1.0	< 2.0
Dibromomethane	8.3	(1)	< 10	< 10	< 10	< 20	1	:	< 50	1	1	1	< 10	1	1	< 50	1	< 3.0	< 3.0	< 1.0	< 2.0
Dichlorodifluoromethane	197	(4)	< 10	< 10	< 10	< 20	!	:	< 50	;	1	1	< 10	!	1	< 50	1	< 3.0	< 3.0	< 1.0	< 2.0
Ethylbenzene	200	(2)	820	170	240	1600	1	1	< 50	1	1	1	160	1	1	320		< 1.0	< 1.0	< 1.0	< 2.0
<i>i</i> n	screening	Source		MM	31			-WM	40			RW-42		-	-RW-	13			-WM	4	
--------------------------------	--------------	--------	--------	--------	--------	--------	--------	--------	------------------	--------	--------	--------	-----------------	--------	--------	--------	--------	-----------------	--------	--------	--------
	Levels		Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15
Hexachlorobutadiene	1.39	(4)	< 10	< 10	< 10	< 20	1	1	< 50	1	1	1	< 10	!	!	< 50	:	< 2.0	< 2.0	< 1.0	< 2.0
Isopropylbenzene	447	(4)	ទ	27	37	100	1	1	55	1	1	1	<mark>65</mark>	1	1	80	1	< 1.0	< 1.0	< 1.0	< 2.0
Methyl tert-butyl ether (MTBE)	143	(4)	< 10	< 10	< 10	< 20	!	1	< 50	-	1	1	14	1	1	670	1	1:1	0.98J	< 1.0	< 2.0
Methylene Chloride	5	(2)	< 30	< 30	< 30	< 60	1	:	< 150	1	1	1	< 30	:	1	< 150	1	< 1.0	< 1.0	< 3.0	< 6.0
Naphthalene	1.65	(4)	160	20	74	210	1	:	110	-	1	1	300	!	!	370	:	< 1.0	< 1.0	< 2.0	< 4.0
n-Butylbenzene			16 J	4.2 J	< 30	< 60	!	1	< 150	1	1	1	< 30	1	1	< 150	:	< 1.0	< 1.0	< 3.0	< 6.0
n-Propylbenzene	•		210	89	130	290	1	1	<mark>8</mark> 3	1	1	1	110	!	!	84	1	< 1.0	< 1.0	< 1.0	< 2.0
sec-Butylbenzene			26	7	24	42	1	1	< 50	-	1	1	17	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
Styrene	100	(2)	< 10	< 10	< 10	< 20	1	:	< 50	-	1	1	< 10	!	!	< 50	:	< 1.0	< 1.0	< 1.0	< 2.0
tert-Butylbenzene			< 10	< 10	< 10	< 20	1	1	< 50		1		< 10	1	1	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
Tetrachloroethene (PCE)	5	(2)	< 10	< 10	< 10	< 20	1	1	< 50		i	1	< 10	1	1	< 50	1	< 4.0	< 4.0	< 1.0	< 2.0
Toluene	750	(3)	760	2	< 10	3500	1	;	< 50	1	1	1	< 10	1	-	5	1	< 2.0	< 20	< 10	< 20
trans-1.2-DCE	100	(2)	< 10	< 10	< 10	< 20	:	:	< 50	1	;	;	< 10	1	•	< 50	;	< 10	< 10	< 1.0	< 2.0
trans-1.3-Dichloropropene	4.71	(4)	< 10	< 10	< 10	< 20	1	1	< 50		1		< 10	1	1	< 50		< 1.0	< 1.0	< 1.0	< 2.0
Trichloroethene (TCE)	2	(2)	< 10	< 10	< 10	< 20	1	1	< 50	1	1	:	< 10	1	1	< 50		< 10	< 10	< 1.0	< 2.0
Trichlorofluoromethane	1136	(4)	< 10	< 10	< 10	< 20	!	1	< 50	1	:	.	< 10	:	:	< 50	:	< 4.0	< 4.0	< 1.0	< 2.0
Vinvl chloride	-	(3)	< 10	< 10	< 10	< 20	1	1	< 50		1		< 10	1	!	< 50	1	< 1.0	< 1.0	< 1.0	< 2.0
Xvlenes Total	620	(3)	1400	110	2	3800	;	;	< 75	;	;	1	41		-	1100	:	< 15 2 15	< 15	, 1 v	< 3.0
Semi-Volatile Organic Compound	ds (iid/l ).	6			2	8												2		2	0.00
	-/ An -/-	(0)				Ī				Ī											
1,2,4-I ricniorobenzene	0,00	(Z)	1	1	1	!	!	1	1	1	;		;		•		:	1	1	1	1
1,2-UICNIOrobenzene	009	(7)	1	1	1	!	!	1	1		1	1	1	!		!	:	1	1	1	1
1, 3-Dichlorobenzene	•		1	1	1	1	1	1	1		1	1	1	1		1	1	1	!	1	1
1,4-Dichlorobenzene	75	(2)	1	1	!	1	1	:	1	1	1	1	1	-	1	!	:	1	!	:	1
1-Methylnaphthalene	11	(5)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2,4,5-Trichlorophenol	1170	(4)	1	1	!	1	1	;	:	-	1	1	-	!	1	:	:	-	:	:	1
2,4,6-Trichlorophenol	11.9	(4)	1	1	1	1	1	;	:	1	1	1	1	1	1	!	:	1	!	:	1
2,4-Dichlorophenol	45.3	(4)	1	1	1	1	1	1	!	-	1	1	-	1	-	1	1	1	!		1
2,4-Dimethylphenol	354	(4)	1	1	1	!	!	1	-	1		-	-	1	-		;	:	-	-	
2,4-Dinitrophenol	38.7	(4)	1	1	1	1	!	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2,4-Dinitrotoluene	2.37	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2,6-Dinitrotoluene	0.485	(4)	1	1	1	1	1	1	1	-	1	1	1	1		!	1	1	1	:	1
2-Chloronaphthalene	733	(4)	1	1	1	1	1	1	:	-	1	1	1	1		1	1	1	1	:	1
2-Chlorophenol	91	(4)	1	1	1	1	1	1	1	1	1	1	1	1		:	:	1	1	:	1
2-Methylnaphthalene	36	(1)	1	1	1	1	!	1	1	1	1	1	1	1		:	:	1	1	1	1
2-Methylphenol	930	(1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2-Nitroaniline	190	(1)	1	1	1	1	!	-	!	-	1	-	-	1		-		1	1	-	1
2-Nitrophenol	•		1	1	1	1	1	1	:	-	1	1	-	-	-	1	1	1	1		1
3,3'-Dichlorobenzidine	1.25	(4)	1	1	:	1	!	:	:	:	1	1	1	1	1	1	1	1	1	-	1
3+4-Methylphenol	930	(1)		1	1	!	!	:	:	1	:	1	1	1	1	1	1	1	:	-	1
3-Nitroaniline	•		1	1	1	!	!	-	:	1	-	1	1	1	1	!	-	1	1	-	1
4,6-Dinitro-2-methylphenol	1.52	(4)	1	1	1	1	!	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4-Bromophenyl phenyl ether	•		1	1	1	1	1	:	:	:	1	1	1	1	1	1	1	1	1	-	1
4-Chloro-3-methylphenol	•		1	1	1	1	1	1	:	-	1	1	-	-	-	1	1	1	1		1
4-Chloroaniline	3.7	(2)	1	1	1	1	!	-	!	-	1	-	-	1		-		1	1	-	1
4-Chlorophenyl phenyl ether			1	1	1	1	!	:	:	-	1	1	1	1	1	1	1	1	!		1
4-Nitroaniline	38	(2)	1	1	1	1	1	:	1	:	;	1	1	1	1	1	:	1	1	:	1
4-Nitrophenol	•		1	1	1	!	!	1	1	1	;	1	1	1	1	1	1	1	!	:	1
Acenaphthene	535	(4)	1	1	!	!	!	1	1	1	1	1	1	1		1	1	1	1	-	1
Acenaphthylene	•		1	1	1	1	!	1	-	1		1	1	1	1	1		1	!	-	1

	Screening	Cource		-WM	31			-MM	40			RW-42			RW-4	3			-MM	44	
	Levels	20100	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15
Aniline	130	(5)	1	1	1	1	1	:	:	:	1	1	1	1	1	:	;	1	!	1	1
Anthracene	1720	(4)	1	1	1	1	1	1	1	-	1	1	1	1	1	1	-	1	1		
Azobenzene	1.2	(5)	1	1	1	1	1	1	:	:	1		1			-	1	1	1	:	
Benzo(a)anthracene	0.12	(4)	1	1	1	1	1	1	:	1	1	1	1			1	:	1	1	:	
Benzo(a)pyrene	0.2	(2)	1	1	1	1	1	1	:	1	1	1	1			!	1	1	1	1	-
Benzo(b)fluoranthene	0.343	(4)	1	1	1	1	1	1	:	1	1	1	1			1	:	1	1	:	
Benzo(g,h,i)perylene			1	1	1	1	1	1	1	:	1	1				!	:	1	1	:	
Benzo(k)fluoranthene	3.43	(4)	1	1	1	1	1	1	:	1	1	1	1			1	:	1	1	:	
Benzoic acid	75000	(1)	1	1	1	1	1	1	:	:	1		1			-	1	1	1	:	
Benzyl alcohol	2000	(1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Bis(2-chloroethoxv)methane	59	(1)	1	1	1	1	1	1	1	1	1					1		1	1	1	
Bis(2-chloroethvl)ether	0.137	(4)	1	1	1	1	1	1	1	1	1	1	1			1	1	1	1	1	1
Bis(2-chloroisopropul) ether	9.81	(4)	1				1	1	1		1					1	1	1	1	1	
Bic/2-athylhowylhhalate	- 																		-		
	046	(2)																			
Dutyt Derizyt printalate	001	(c)																1			
Christian	21.2	(4)																			
Dihonz/a h)anthracana	0.0243	(+)																			
	0.400	(+)										1				1					
DIDENZOTURAN			1	1		1	•			1		•	1			1	:	:	!	:	
Diethyl phthalate	14800	(4)	1				1	1	1	1	1	1	1			1	1	1	1	1	1
Dimethyl phthalate	•		1	1	1	1	1	1	1	1	1	1	1			1	1	1	!	1	1
Di-n-butyl phthalate	885	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Di-n-octyl phthalate	•		-	;	-	!	1	-	:	:	:	1	1	1	1	:	:	:	!	:	-
Fluoranthene	802	(4)	1	1	1	1	1	1	:	-	1	1	1	1	1	1	:	1	!	1	-
Fluorene	288	(4)	1	1	1	1	1	1	1	1	1	ł	1	1	1	1	1	1	1	1	1
Hexachlorobenzene	0.0976	(4)	1	1	1	1	1	:		-	-	1	1	1	1	-	;	1	!	1	-
Hexachlorobutadiene	1.387	(4)	1	1	1	1	1	1	1	1	1	ł	1	1	1	1	1	1	1	1	1
Hexachlorocyclopentadiene	50	(4)	1	1	1	1	1	:	:	:	1	1	1			-	-	1	1	:	-
Hexachloroethane	3.28	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1
Indeno(1,2,3-cd)pyrene	0.343	(4)	1	1	1	1	1	1	:	1	1	1	1	1	1	1	1	1	1	1	1
Isophorone	781	(4)	1	1	1	1	1	1	1	1	1	1	1			1	1	1	1	:	
Naphthalene	1.65	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nitrobenzene	1.4	(4)	1	1	1	1	1	1	1	1	1	1	1			!	1	1	1	:	-
N-Nitrosodimethylamine	0.0017	(4)	1	1	1	1	1	:	:	:	1		1			-	:	1	1	:	-
N-Nitrosodi-n-propylamine	0.11	(5)	1	1	1	1	1	:	1	1	1	ł	1	1	1	1	;	1	1	1	1
N-Nitrosodiphenylamine	0.0049	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pentachlorophenol	170	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Phenanthrene	1	(4)	1	1	1	1	1	-			-	1	-	1	1	-	-	1	!	1	1
Phenol	5760	(4)	1	1	1	1	1	:	:	-	1	1	1	1	1	!	1	:	!	:	-
Pyrene	117	(4)	1	1	1	1	1	:	:	:	1	1	1	1	1	!	1	1	!	;	1
Pyridine	20	(1)	1	1	1	!	1	:	:	:	:	:	;	1	!	:	:	:	:	:	ł
General Chemistry (mg/L):																					
Fluoride	1.6	(3)	< 0.10	< 0.10	< 0.10	< 0.10	1	:	< 0.50	1	1	1	0.62	1	1	< 0.50	:	< 0.50	< 0.10	9.0	< 0.10
Chloride	250	(3)	170	170	220	200	1	1	290	1	1	1	260	1	1	390	1	48	46	20	22
Nitrite	-	(2)	< 1.0	< 1.0	< 1.0	< 0.10	1	;	< 0.50	1	ł	I	< 0.50	1	1	< 0.50	1	0.079 J	< 1.0	< 0.10	< 0.10
Bromide	•		1.7	1.7	< 0.10	< 0.10	-	-	2	:	:	1	4.6	1	1	3.9	1	0.16	0.14	0.18	0.47
Nitrate	10	(3)	< 1.0	< 1.0	< 1.0	0.63	1	:	< 0.50	:	1	ł	< 0.50	1	1	< 0.50	:	0.050 J	< 1.0	< 0.10	0.13
Phosphorus	•		< 0.50	< 0.50	< 0.50	< 0.50	1	:	< 2.5	:	1	1	3.4	1	1	3.1	;	< 10	< 10	< 10	< 10
Sulfate	600	(3)	78	78	160	17	-	-	< 2.5	:	-	1	< 2.5	1	!	6.9	1	3000	3000	3000	3000
Carbon Dioxide (CO <sub>2</sub> )			1100 H	1100	1000	1100	1	ł	1200	1	ł	ł	1100	ł	1	1100	1	350	350	360	340
Alkalinity (CaCO <sub>3</sub> )			1217	1164	1115	1264	!	1	1190	1	1	1	1130	1	1	1165	1	373.5	371.8	376.3	377.6
Bicarbonate (CaCO <sub>3</sub> )			1217	1164	1115	1264	1	-	1190		-	1	1130			1165		373.5	371.8	376.3	377.6

TABLE 3	Terminal Wells Analytical Summary	2018 Groundwater Remediation and Monitoring Annual Report
---------	-----------------------------------	---

	Screening	Controo		-MM	31			-WM	40			RW-42			RW.	43			-MM	44	
	Levels	2001 00	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15
Total Metals (mg/L):																					
Arsenic	0.01	(2)	<0.020	0.015J	< 0.020	< 0.020		:	< 0.020	1	1	1	0.094	1	1	< 0.020	1	<0.020	0.026	< 0.020	< 0.020
Barium	2.0	(2)	06.0	0.37	0.7	1.4	1	:	2.3	1	1	:	13	:	!	13	:	0.068	0.066	0.17	0.19
Cadmium	0.005	(2)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	1	1	< 0.0020	1	1	1	< 0.0020	1	1	< 0.0020	1	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Chromium	0.05	(3)	< 0.0060	< 0.0060	< 0.0060	< 0.0060	1	:	0.018	1	;	:	0.16	:	!	0.37	:	0.0059	0.0062	0.026	0.029
Lead	0.015	(2)	< 0.0050	< 0.0050	< 0.0050	< 0.0050	-	:	0.0098	1	1	1	0.092	!	1	0.055	1	< 0.0050	< 0.0050	< 0.0050	0.0053
Selenium	0.05	(3)	< 0.050	< 0.050	< 0.050	< 0.050	1	:	< 0.050	1	;	1	< 0.050	:	1	< 0.050	:	< 0.050	< 0.050	< 0.050	< 0.050
Silver	0.05	(3)	0.0033 J	< 0.0050	< 0.0050	< 0.0050	-	:	0.014	-	;		< 0.0050		1	< 0.0050	:	0.013	< 0.0050	< 0.0050	< 0.0050
Mercury	0.002	(3)	< 0.00020	< 0.00020	< 0.00020	< 0.00020	-	-	< 0.00020	:	:	-	< 0.00020	-	-	< 0.00020		0.000085J	< 0.00020	< 0.00020	< 0.00020
Dissolved Metals (mg/L):																					
Arsenic	0.01	(2)	< 0.020	< 0.020	< 0.020	< 0.020	1	:	< 0.020		1	1	< 0.020	1	1	< 0.020	1	<0.020	0.034	< 0.020	< 0.020
Barium	1.0	(3)	0.89	0.76	0.58	1.4	1	1	1.8	1	1	1	6.4	1	1	1.1	1	0.01	0.011J	0.02	< 0.020
Cadmium	0.005	(2)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	1	1	< 0.0020	1	1	1	< 0.0020	1	1	< 0.0020	1	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Calcium			110	100	110	110	1	1	97	1	1	1	120	1	1	180	1	480	480	480	470
Chromium	0.05	(3)	< 0.0060	< 0.0060	< 0.0060	< 0.0060	-	:	< 0.0060	-	:	1	0.014	!	1	0.27	:	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Copper	-	(3)	< 0.0060	< 0.0060	< 0.0060	< 0.0060	-	:	< 0.0060	1	1	1	< 0.0060	!	1	0.017	1	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Iron	-	(3)	0.097	0.14	1.2	0.26		-	4.9	-	1	1	69	1	1	27		0.029	0.032	2.9	0.036
Lead	0.015	(2)	< 0.0050	< 0.0050	< 0.0050	< 0.0050	-	:	< 0.0050	1	1	1	0.036	!	1	0.015	1	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Magnesium			38	32	38	45		1	44	-	1	-	74	1	1	63		58	58	59	<b>2</b> 9
Manganese	0.2	(3)	0.65	0.42	0.4	1.1	-	:	2.3	-	1	1	4	1	1	6.5	-	0.68	0.79	1.2	0.99
Potassium			4.0	3.7	4.1	4.4		1	3.5	-	1	-	5.4	1	1	14		7.2	7.1	7.9	7.9
Selenium	0.05	(3)	< 0.050	< 0.050	< 0.050	< 0.050	-		< 0.050	-	1	1	< 0.050	1	1	< 0.050	-	< 0.050	< 0.050	< 0.050	< 0.050
Silver	0.05	(3)	0.0032	< 0.0050	< 0.0050	< 0.0050	1	1	< 0.0050	1	1	1	< 0.0050	1	1	< 0.0050	1	0.014	< 0.0050	< 0.0050	< 0.0050
Sodium	•		480	480	540	500	-	:	440	1	1	1	400	!	1	440	1	850	910	066	960
Uranium	0.03	(3)	< 0.10	< 0.10	< 0.10	< 0.10	1	1	< 0.10	1	1	1	< 0.10	1	1	< 0.10	1	< 0.10	< 0.10	< 0.10	< 0.10
Zinc	10	(3)	< 0.020	0.01J	< 0.020	0.031			0.031	-	-	-	0.17	-	-	3		< 0.020	0.032	0.056	< 0.020
Total Petroleum Hydrocarbons (	(mg/L):																				
Diesel Range Organics	0.0398	(9)	0.64	0.71	1.1	4.2	-		110	1	-	1	85	!	-	1200	-	< 0.40	< 0.20	< 0.20	< 0.20
Gasoline Range Organics	•		18	3.1	3.5	45	!	1	4.9	-	1	1	24	1	1	27	1	0.026 J	< 0.050	0.057	< 0.050
Motor Oil Range Organics	0.0398	(9)	< 2.5	< 2.5	< 2.5	< 2.5	1	1	< 25	1	1	1	< 25	1	1	< 250	1	< 2.5	< 2.5	< 2.5	< 2.5

Notes: (1) EPA - Regional Screening Levels (June 2017) -Tap Water (2) EPA - Regional Screening Levels (June 2017) - MCL (3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less (4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017) (5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds

ED groundwater screening level for unknown oil
 = No screening level available
 = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time

= Analysis not required and/or well contains separate phase
 = Analytical result exceeds the respective screening level.
 = 6/27/13 modification on FWGWM Plan to remove MW-8 and replace with MW-52.
 = Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase

	NME	ī	*	I	-	**
(5) (3) (2) (4) (5)	(9)					

	Screening					MW-1						-		-WW	13				MW**	-26
,	Levels	Source	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Aug-17
Volatile Organic Compounds (ug/L,																				
1,1,1,2-Tetrachloroethane	5.74	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1,1,1-Trichloroethane	60	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1,1,2,2-Tetrachloroethane	10	(3)	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	1	1
1,1,2-Trichloroethane	5	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1,1-Dichloroethane	25	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1,1-Dichloroethene	5	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	!	< 1.0	i	< 1.0	1	< 1.0	1	1	1
1,1-Dichloropropene	•		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	:	1
1,2,3-Trichlorobenzene			< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	1	1
1,2,3-Trichloropropane	0.01	(4)	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	1	1
1,2,4-Trichlorobenzene	70	(2)	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1,2,4-Trimethylbenzene	15	(1)	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1,2-Dibromo-3-chloropropane	0.2	(2)	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	:	< 2.0	1	1	1
1,2-Dibromoethane (EDB)	0.05	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	!	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1,2-Dichlorobenzene	600	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	!	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1,2-Dichloroethane (EDC)	5	(2)	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1,2-Dichloropropane	5	(2)	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1,3,5-Trimethylbenzene	12	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	:	< 1.0	1	< 1.0	:	< 1.0	1	1	1
1,3-Dichlorobenzene			< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	:	< 1.0	1	< 1.0	:	< 1.0	1	1	1
1,3-Dichloropropane	370	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	-
1,4-Dichlorobenzene	75	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
1-Methylnaphthalene	11	(2)	0.51 J	1	< 4.0	1	< 4.0	1	< 4.0	-	< 4.0	:	< 4.0	1	< 4.0	1	< 4.0	1	:	;
2,2-Dichloropropane			< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	1	ł
2-Butanone	5560	(4)	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	1	1
2-Chlorotoluene	240	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	-	1
2-Hexanone	•		< 10	1	< 10	1	< 10	1	< 10	1	< 10	-	< 10	:	< 10	1	< 10	1	1	1
2-Methylnaphthalene	36	(1)	0.75 J	1	< 4.0	1	< 4.0	-	< 4.0	-	< 4.0	!	< 4.0	-	< 4.0	1	< 4.0	1	1	1
4-Chlorotoluene	250	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	-
4-Isopropyltoluene	1		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
4-Methyl-2-pentanone	1		< 10	:	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	1	1
Acetone	14100	(4)	< 10	1	2.2 J	1	< 10	1	< 10	1	<10	!	3.2 J	1	< 10	1	< 10	1	1	1
Benzene	5	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	1
Bromobenzene	62	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
Bromodichloromethane	1.34	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
Bromoform	33	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	ł
Bromomethane	7.54	(4)	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0		< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	1	1
Carbon disulfide	810	(4)	< 10	:	< 10	1	< 10	1	< 10	1	< 10	1	< 10	i	< 10	1	< 10	1	1	!
Carbon Tetrachloride	5	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
Chlorobenzene	100	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
Chloroethane	20900	(4)	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	!	< 2.0	1	< 2.0	1	< 2.0	1	1	1
Chloroform	100	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	!
Chloromethane	20.3	(4)	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	!	:	1
cis-1,2-DCE	70	(2)	< 1.0	:	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	I	< 1.0	1	< 1.0	1	1	1
cis-1,3-Dichloropropene	4.7	(4)	< 1.0	:	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
Dibromochloromethane	1.68	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	I	< 1.0	1	< 1.0	;	1	1
Dibromomethane	8.3	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
Dichlorodifluoromethane	197	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
Ethylbenzene	700	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	;
Hexachlorobutadiene	1.39	(4)	< 1.0	-	< 1.0	-	< 1.0	1	< 1.0	+	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	-	-	1
Isopropylbenzene	447	(4)	< 1.0	-	< 1.0		< 1.0	-	< 1.0		< 1.0	-	< 1.0	-	< 1.0	-	< 1.0		!	1

73 of 109

~	Screening	Source				1-WW								MM	-13				·MW**	26
-	Levels		Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Aug-17
tert-butyl ether (MTBE)	143	(4)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.72 J	< 1.0	0.51 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	ł
Methylene Chloride	5	(2)	< 3.0	!	< 3.0	1	< 3.0	1	< 3.0	-	< 3.0	!	< 3.0	1	< 3.0	1	< 3.0		-	!
Naphthalene	1.65	(4)	0.59 J	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	1	1
n-Butylbenzene			< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	1	1
n-Propylbenzene			< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
sec-Butylbenzene			< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
Styrene	100	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
tert-Butylbenzene			< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
trachloroethene (PCE)	ъ	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
Toluene	750	(3)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	:	1
trans-1,2-DCE	100	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
s-1,3-Dichloropropene	4.71	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
Trichloroethene (TCE)	5	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	1	1
<b>Frichlorofluoromethane</b>	1136	(4)	< 1.0	1	< 1.0	:	< 1.0	:	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	1		
Vinyl chloride	-	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	:	< 1.0		< 1.0	1	1	
Xylenes, Total	620	(3)	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	1	1
tile Organic Compounds	s (ug/l):																			
1,2,4-Trichlorobenzene	70	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1,2-Dichlorobenzene	600	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1,3-Dichlorobenzene			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1,4-Dichlorobenzene	75	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-Methylnaphthalene	11	(2)	1	1	1	1	1	1	1	1	!	1		1	ł	1	1	1	1	1
2,4,5-Trichlorophenol	1170	(4)	1	1	!	1	1	1	1	1	:	1	1	:	1	1	1	1	1	1
2,4,6-Trichlorophenol	11.9	(4)	1		!	1	1	1	!	!	!	1	!	1	1	1	!	-	1	1
2,4-Dichlorophenol	45.3	(4)	1		!	1	1	1	!	!	1	1	!	1	1	1	!	-	1	1
2,4-Dimethylphenol	354	(4)	1	1	!	1	1	!	!	1	1	1	1	1	1	1	!	1	1	1
2,4-Dinitrophenol	38.7	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	!	1	1	1
2,4-Dinitrotoluene	2.37	(4)	1	1	1	1	1	1	1	1	1	ł	1	1	1	ł	1	1	1	1
2,6-Dinitrotoluene	0.485	(4)	1	!	!	1	1	1	1	!	!	!	1	1	1	1	1	1	!	1
2-Chloronaphthalene	733	(4)	1	!	!	!	1	1	1	!	!	1	1	1	1	1	1	-	1	1
2-Chlorophenol	91	(4)	1		!	!	1	1	1	1	!	1	-	1	1	1	1		1	1
2-Methylnaphthalene	36	(1)	1		!	1	1	1	1	1	!	1	-	1	1	1	-		1	1
2-Methylphenol	930	(1)	1	-	1	1	1	1	1	1	-	1	-	1	1	1		-	1	1
2-Nitroaniline	190	(1)	1	1	1	1	1	1	!	1	1	1	1	1	1	1	1	-	;	ł
2-Nitrophenol			1	!	1	!	1	1	1	1	!	1	1	1	1	ł	1	1	1	ł
3,3'-Dichlorobenzidine	1.25	(4)	1		!	!	1	1	1	1	!	1	-	1	1	1	1		1	1
3+4-Methylphenol	930	(1)	1	1	!	1	1	1	!	1	1	1	:	1	1	1	!	1	1	1
3-Nitroaniline	•		:	1	!	1	1	1	:	1	!	1	:	ł	1	1	!	-	1	1
Dinitro-2-methylphenol	1.52	(4)	1		!	1	1	1	1	1	1	1	-	1	1	1	-		1	1
nophenyl phenyl ether	•		1	1	-	1	1	!	!	1	1	1	1	1	1	1	!	1	1	!
Chloro-3-methylphenol	I		1		-	1	-	-			-	1	1		1		-			1
4-Chloroaniline	3.7	(2)	1	!	1	!	1	1	1	1	!	1	1	1	1	ł	1	-	1	1
prophenyl phenyl ether	•		1	!	!	1	1	1	1	1	1	1	:	1	1	1	1	1	1	1
4-Nitroaniline	38	(2)	1	1	!	1	1	1	1	1	-	1	1	1	1	1	!	1	;	1
4-Nitrophenol			1	1	1	1	1	1	!	1	1	1	1	1	1	1	!	-	1	1
Acenaphthene	535	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ł
Acenaphthylene			;	1	1	1	1	1	1	1	1	1	1	1	1	1	:	1	;	1
Aniline	130	(2)	1	!	-	;	1	1	1	1	1	1	:	1	;	1	-	1	1	ł
Anthracene	1720	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ł
Azobenzene	1.2	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1	1

-26	Aug-17	1		1	1	1	1	1	1	1	1	1		1	!	ł	1	!	1	1	1	1	1		1		1	1	1	1	1	1	1	1	1	1	-	1	1		1			1	1	1	ł	1	
<b>MW</b> **	Aug-18	1	ł	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ł	1	1	1	1	1	1	1	1	1	1	1	1	1						1	1	1	1	
	Apr-15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	!	!	1	1	1	1	1	1	1	1	1	1	ł	1	1	1	1	1	1	1	1		1				1	1	1	1	
	Aug-15	1	1	1	1	1	1	1	:	:	1	1	1	1	1	ł	1	!	1	1	:	1	1	:	:	:	1	1	1	1	ł	1	1	:	1	1	1	1	1		< 0.10	940	10	0.25	< 0.50	1100	890	909.4	
	Apr-16	1	ł	1	1	1	1	!	1	1	1	1	1	1	!	1	1	ł	1	!	!	1	1	1	1	1	!	1	1	1	1	1	1	!	1	1	1	1	1		1			1	1		1	1	
13	Aug-16	1	1	1	1	1	1	1	:	1	1	1	1	1	1	1	1	1	1	1	1	;	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1		< 0.10	0 5	<mark>.</mark> ~	18	< 0.50	850	950	954.3	-
-MM	Apr-17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	:	1	:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1				1		1	1	
	Aug-17	1	-	1	1	1	1	1	:	:	:	1	1	1	1	;	1	1	1	1	1	:	1	:	1	:	1	1	1	1	1	1	1	1	1	;	;	;	1		< 0.10	240	50	27	< 0.50	860	950	958.8	
	Apr-18	1	ł	-	-	:	1	:	:	:	1	1	1	1	:	1	;	!	1	1	;	!	1	:	;	:	1	:	1	:	1	1	;	1	1	-	1	1	1	-	1				1		1	!	
	Aug-18	1	1	-	!	!	1	-	:	:	:	1	1	1	-	1	1	!	1	1	:	:	1	-	:	:	1	1	!	1	!	1	1	1	1	1	:	:	1		< 0.10	200	000	35	< 0.50	920	890	954.5	-
	Apr-15	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	:	1	:	1	!	1	1	1	1	1	1	1	1		-	!	1	!								1	1	
	Aug-15	1	ł	1	1	-	1	-	-	-	1	1	1	1	-	ł	1	ł	1	1	:	1	1	:	:	:	1	1	1	1	1	1	1	1	1	•	!	!	!		0.51		< 0.10	0.54	< 0.50	110	230	246.5	-
	Apr-16	1	-		-	-	1	-	:	1	1	1	1	1	-	1	1	1	1	1	!	1	1	1	1	-	!	1	1	1	1	1	1	1	1	•	1	1	1	-	1				1		1	1	
	Aug-16	1		-	-		1	-	1	1	1	1	1	1		1	1	1	1	1	1	-	1	-	1	-	1	1	1	1	1	1	1	1	:	1	1	1	1		0.45 14		< 0.10	< 10	< 0.50	84	240	266.4	
MW-1	Apr-17 /	1	-	-	-	-	1	-	-	:	:	1	1	1	-	:	1	1	1	1	1	-	1	:	1	!	1	1	-	1	1	1	1	1	1	;	1	1	1						1	-	1	:	
	ng-17	1	-	-		-	1	-					1		-	!	-	!	1	1	1	:	1	-	-		1	1	-	1	!	1	1	1	1	•		1	-		0.32 1E	2	010		0.50	110	280	301.8	-
	r-18 A	-											:			-					:		-	:	:			-		-				-					-							-		-	
	18 Ap						-						'			'	'	1	1	1	1	'	-	•	1	•	-	-	-	-	1	•	1	'	1	'	'	'	'					'  -	50			ן ס	
	Ce Aug-																1		1		1		-	-		-		-		-											0.3	2		0_78	< 0.5	11	32(	355.	110
ing com	noc s	(4	(2)	۶ (4,		(4)	(1) (1)	(1)	(1)	7 (4)	(4)	(2)	(2)		(4)	3 (4		(4)		(4		(4	(4)	6 (4)	7 (4	(4)	(4)	3 (4)	(4)	(4)	(4)	7 (4,	(2)	9 (4	(4	(4)	(4	4	(1)		(3)		Y)	(3)	2	(3)	-		
Screeni	Level	0.12	0.2	0.343	•	3.43	75000	2000	59	0.137	9.81	9	160	•	34.3	0.034	•	14800	•	885	•	802	288	0.0976	1.387	50	3.28	0.343	781	1.65	1.4	0.001	0.11	0.004	170	-	5760	117	20		1.6	7007	- '	10		600	•	•	
		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	Bis(2-chloroethoxy)methane	Bis(2-chloroethyl)ether	Bis(2-chloroisopropyl)ether	Bis(2-ethylhexyl)phthalate	Butyl benzyl phthalate	Carbazole	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodi-n-propylamine	N-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Pyridine		Fluoride		Bromide	Nitrate	Phosphorus	Sulfate	Carbon Dioxide (CO <sub>2</sub> )	Alkalinity (CaCO <sub>3</sub> )	

		Screening					-MM								-MM	13				MM**	-26	
		Levels	Source	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Aug-17	
otal Metals (mg/l):																						
	Arsenic	0.01	(2)	< 0.020	!	< 0.020	1	< 0.020		< 0.020		< 0.020	!	< 0.020	-	< 0.020	1	< 0.020	-	-	1	
	Barium	2.0	(2)	0.13	1	0.061	1	0.28	1	0.031	1	0.028	1	0.025	1	0.052	1	0.022	1	1	1	
	Cadmium	0.005	(2)	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	1	1	
0	Chromium	0.05	(3)	< 0.0060	1	< 0.0060	1	< 0.0060	1	< 0.0060	1	0.017	1	0.0027 J	1	0.059	1	< 0.0060	1	1	1	
	Lead	0.015	(2)	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	1	1	
	Selenium	0.05	(3)	< 0.050	!	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	:	< 0.050	1	< 0.050	1	1	1	
	Silver	0.05	(3)	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	0.0079	1	< 0.0050	:	< 0.0050	1	< 0.0050	1	1	1	
	Mercury	0.002	(3)	0.000083 J	1	0.000067 J	1	< 0.00020	1	< 0.00020		0.000074 J	1	< 0.00020	1	< 0.00020	1	< 0.00020	1	1	1	
Dissolved Metals (mg/l)																						
	Arsenic	0.01	(2)	<0.020	-	0.0096 J	1	< 0.020	1	< 0.020	1	< 0.020	-	0.013 J	1	< 0.020	1	< 0.020	!	1	1	
	Barium	1.0	(3)	0.036	1	0.036	1	0.022	1	0.031	1	0.022	1	0.024	1	0.022	1	0.023	1	1	1	
	Cadmium	0.005	(2)	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	1	1	
	Calcium			6	1	83	1	65	1	17	1	250	1	230	1	230	1	260	1	1	1	
O	Chromium	0.05	(3)	< 0.0060	1	< 0.0060	1	< 0.0060	1	< 0.0060	1	< 0.0060	1	< 0.0060	:	< 0.0060	1	< 0.0060	1	1	1	
	Copper	-	(3)	< 0.0060	1	< 0.0060	1	< 0.0060	1	< 0.0060	1	0.0027	1	< 0.0060	1	< 0.0060	1	< 0.0060	1	1	1	
	Iron	-	(3)	0.030	1	0.012 J	1	0.22	1	< 0.020	1	< 0.020	1	< 0.020	1	0.044	1	< 0.020	-	-	:	
	Lead	0.015	(2)	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	1	1	
Me	agnesium	•		19	!	19	1	16	1	17	1	81	1	84	1	8	1	96	1	1	1	
Ma	anganese	0.2	(3)	0.037	!	0.016	1	0.2	1	0.037	-	1.6	-	1.3	-	0.95	1	0.6	1	1	:	
đ	otassium	•		1.9	!	2.4	1	2.8	1	2.2	1	3.4	:	3.6	1	4	:	4.1	1	1	:	
	Selenium	0.05	(3)	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	<0.25	1	< 0.050	1	< 0.050	1	< 0.050	1	1	-	
	Silver	0.05	(3)	0.0024	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	0.0051	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	1	1	
	Sodium	•		57	ł	73	1	81	1	68	ł	570	1	530	1	540	1	570	1	1	1	
	Uranium	0.03	(3)	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	1	1	1	
	Zinc	10	(3)	0.15	1	0.031	1	0.024	1	0.027	1	0.040	1	0.017 J	1	< 0.020	1	0.027	1	1	1	
otal Petroleum Hydroc	carbons (mo	:(I/B																				
Diesel Range	Organics	0.0398	(9)	< 0.20	< 0.40	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.40	-	< 0.20	-	< 0.20	-	0.28	-	-		
Gasoline Range	Organics		·	0.024 J	< 0.050	< 0.050	< 0.050	< 0.050	1	< 0.050	< 0.050	0.033 J		<0.050	1	< 0.050	1	< 0.050	1	1	!	
Motor Oil Range	Organics	0.0398	(9)	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	<2.5	1	<2.5	1	< 2.5	1	< 2.5	1	1	ł	

 Notes:
 (1) EPA - Regional Screening Levels (June 2017) - Tap Water

 (2) EPA - Regional Screening Levels (June 2017) - MCL
 (3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

 (4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)

 (5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds

 (6) NMED groundwater screening level for unknown oil

 = No screening level available

 \*
 = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time

Analysis not required and/or well contains separate phase
 Analysis not required and/or well contains separate phase
 Analytical result exceeds the respective screening level.
 Analytical result exceeds the respective screening level.
 Analysis modification on FWGWM Plan to remove MW-8 and replace with MW-52.
 Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase

\*\* **-**

	Screening			-MM	27			-MM	32					-WM	33			
	Levels	Source	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Methyl tert-butyl ether (MTBE)	143	(4)	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	1	!	< 1.0	<1.0	< 1.0	<1.0	1	<1.0
Methylene Chloride	5	(2)	< 3.0	< 3.0	< 6.0	< 6.0	< 3.0	< 3.0	< 3.0	< 3.0	1	1	< 3.0	1	< 3.0	1	1	1
Naphthalene	1.65	(4)	< 2.0	< 2.0	< 4.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	1	1	< 2.0	1	< 2.0	1	1	1
n-Butylbenzene			< 3.0	< 3.0	< 6.0	< 6.0	< 3.0	< 3.0	< 3.0	< 3.0	:		< 3.0	1	< 3.0	1	:	1
n-Propylbenzene	1		< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	1	1	< 1.0	1	< 1.0	1	1	1
sec-Butylbenzene			< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	;	1	< 1.0	1	< 1.0	1	:	1
Styrene	100	(2)	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	1	1	< 1.0	1	< 1.0	1	1	1
tert-Butylbenzene	ı		< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	1	1	< 1.0	!	< 1.0	!	:	1
Tetrachloroethene (PCE)	5	(2)	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	-	-	< 1.0	-	< 1.0	-	;	;
Toluene	750	(3)	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	1	!	< 1.0	<1.0	< 1.0	<1.0	1	<1.0
trans-1,2-DCE	100	(2)	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	1	1	< 1.0	1	< 1.0	1	1	1
trans-1,3-Dichloropropene	4.71	(4)	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	1	:	< 1.0	1	< 1.0	1	:	1
Trichloroethene (TCE)	5	(2)	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	1	:	< 1.0	1	< 1.0	1	:	1
Trichlorofluoromethane	1136	(4)	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	1	:	< 1.0	1	< 1.0	1	:	1
Vinyl chloride	1	(3)	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	1	1	< 1.0	1	< 1.0		1	.
Allenes, I otal	070	(3)	C.I. >	C.I.>	< 3.0	< 3.0	C.I. >	C.1.>	c.l >	C.T >	•	1	c.l >	C.1>	c.l >	C.1>		C.T>
Semi Volatile Organic Compound	s (I/gu) :	1																
1,2,4-Trichlorobenzene	20	(2)	1	1	1	!	1	1	1	1	1	1	1	!	1	1	1	1
1,2-Dichlorobenzene	600	(2)	1	1	1	1	1	1	1	1	1	1	1	!	;	1	1	1
1,3-Dichlorobenzene	I		!	1	1		1	1	1		1	1		!		1	!	!
1,4-Dichlorobenzene	75	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	!	1
1-Methylnaphthalene	11	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ł
2,4,5-Trichlorophenol	1170	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ł
2,4,6-Trichlorophenol	11.9	(4)	:	:	1	-	:	:	-				:	-	:		:	1
2,4-Dichlorophenol	45.3	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	!	1	1
2,4-Dimethylphenol	354	(4)	1	1	1	-		:	-	1		1	1	-	1	1	:	
2,4-Dinitrophenol	38.7	(4)	1	1	1	!	!	1	!	1	-	1	1	!	1	1	;	!
2,4-Dinitrotoluene	2.37	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ł
2,6-Dinitrotoluene	0.485	(4)	1	ł	ł	1	1	1	1	1	1	1	1	1	ł	1	1	!
2-Chloronaphthalene	733	(4)	1	1	1	1	1	1	!	1	1	1	1	1	1	1	1	1
2-Chlorophenol	91	(4)	1	1	1	1	1	1	!	1	1	1	1	1	1	!	1	1
2-Methylnaphthalene	36	(1)	1	1	ł	I	1	1	!	1	1	1	1	1	1	!	1	1
2-Methylphenol	930	(1)	1	1	1	1	1	1	!	1	;	1	1	1	1	1	1	1
2-Nitroaniline	190	(1)	1	1	ł	1	1	1	1	1	1	1	1	1	1	1	1	1
2-Nitrophenol	•		1	1	ł	1	-	1	1	1	1	1	1	!	1	;	;	1
3,3'-Dichlorobenzidine	1.25	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3+4-Methylphenol	930	(1)	!	;	;	1	1	1	1	!	:	1	1	1	1	1	1	1
3-Nitroaniline	-	:	1	:	1	1	1	1	1	1	-	1	1	1	1	1	:	1
4,6-Dinitro-2-methylphenol	1.52	(4)	1	;	1	1	1	1	1		-	1	-	1	1	1	:	1
4-Bromophenyl phenyl ether	1		1	;	1	1	1	1	!	1	1	1	1	1	1	1	1	1
4-Chloro-3-methylphenol			1	1	1	1	1	1	1		-	1	1	1	1	!	-	1
4-Chloroaniline	3.7	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	!	1	1
4-Chlorophenyl phenyl ether			1	1	1	1	1	1	1	1	1	1	1	1	1	1	;	1
4-Nitroaniline	38	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4-Nitrophenol			1	1	1	1	1	1	1	1	1	1	1	;	1	1	1	1
Acenaphthene	535	(4)	1	1	1	1	I	1	1	1	1	1	1	1	1	I	1	1
Acenaphthylene			1	1	1	1	1	1	1	1	:	:	1	1	1	1	1	1
Aniline	130	(2)	1	1	1	I	1	1	1	1	;	1	1	1	1	1	1	1
Anthracene	1720	(4)	1	1	1	I	1	1	1	1	;	1	1	1	1	1	1	1
Azobenzene	1.2	(2)	-	-	;	1	-	-		-	-	-	-	-	-	-	-	1

TABLE 4 Cross-Gradient Wells Analytical Summary 2018 Groundwater Remediation and Monitoring Annual Report
---

	Screening			MM	-27			-MM	32					MM	33			
	Levels	2000	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Benzo(a)anthracene	0.12	(4)	!	1	1	1	1	1	1	1	1	!	;	1	1	1	-	1
Benzo(a)pyrene	0.2	(2)	!	1	1	1	1	1	1	!	!	:	1	1	1	!	1	1
Benzo(b)fluoranthene	0.343	(4)	!	1	1	1	1	1		1	1	-	:	1	-	1	1	1
Benzo(g,h,i)perylene			1	1	1	1	1	1	1	1	1	1	:	1	1	1	:	1
Benzo(k)fluoranthene	3.43	(4)	1	;	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Benzoic acid	75000	(1)	1	1	1	1	1	1		1	1		1	1	-	1	1	1
Benzyl alcohol	2000	(1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bis(2-chloroethoxy)methane	59	(1)	1	1	1	1		1	-	1	1	-	1	-	-	1	1	1
Bis(2-chloroethyl)ether	0.137	(4)	1	1	1	1	1	1	1	;	1	1	1	1	1	;	;	1
Bis(2-chloroisopropyl)ether	9.81	(4)	1	1	1	1	1	1	1	1	1	!	1	1	1	1	1	1
Bis(2-ethylhexyl)phthalate	9	(2)	1	1	1	1	1	1	1	1	1	!	1	1	1	1	1	1
Butyl benzyl phthalate	160	(2)	1	1	1	1	1	1	1	1	1	!	1	1	1	1	1	1
Carbazole	•		1	1	1	1	1	1	1	1	1	1	;	1	1	1	1	1
Chrysene	34.3	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dibenz(a,h)anthracene	0.0343	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dibenzofuran			1	1	1	1	!	:	1	1	1	1	1	1	!	:	;	1
Diethyl phthalate	14800	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	:	;	;
Dimethyl phthalate			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Di-n-butyl phthalate	885	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Di-n-octyl phthalate			1	1	1	1	1	1	1	1	1	1	1	1	1	1	:	1
Fluoranthene	802	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	:	1
Fluorene	288	(4)	1	1	1	1	1	1	!	!	1	:	ł	1	1	1	1	ł
Hexachlorobenzene	0.0976	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hexachlorobutadiene	1.387	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hexachlorocyclopentadiene	50	(4)	1	1	1	1	1	!	1	1	1	1	1	1	!	!	:	1
Hexachloroethane	3.28	(4)	I	1	1	ł	1	1	1	1	1	1	1	1	1	1	1	ł
Indeno(1,2,3-cd)pyrene	0.343	(4)	1	1	1	1	1	ł	1	!	!	:	1	1	1	ł	ł	ł
Isophorone	781	(4)	1	1	1	1	ł	ł	ł	1	1	:	1	1	1	ł	1	ł
Naphthalene	1.65	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nitrobenzene	1.4	(4)	1	1	1	1	1	1	!	1	1	;	1	1	1	1	1	1
N-Nitrosodimethylamine	0.0017	(4)	1	1	1	ł	1	1	1	1	1	:	1	1	1	1	1	1
N-Nitrosodi-n-propylamine	0.11	(2)	I	1	1	1	1	1	1	1	ł	1	1	1	1	1	1	ł
N-Nitrosodiphenylamine	0.0049	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	;	1
Pentachlorophenol	170	(4)	I	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Phenanthrene	~	(4)	1	1	1	1	1	1	1	1	1	!	1	1	1	1	1	1
Phenol	5760	(4)	1	1	1	1	1	1	1	1	1	1	;	;	1	1	1	1
Pyrene	117	(4)	1	1	1	1	1	1	1	1	1	1	;	1	1	1	1	1
Pyridine	20	(1)	;	1	1	1	1	1	:	1	;	;	;	1	1	1	:	!
General Chemistry (mg/l):		Į						1		:								
Fluoride	1.6	(3)	<2.0	< 0.50	< 0.50	< 0.50	< 0.10	< 0.10	< 0.10	< 0.10	1	I		1	0.51	•	:	1
	nc7	(c) (C)	<b>010</b>	<b>440</b>	200	<b>004</b>	000	000	000	000	1	1	LV LV		nc7			
Nitrite	-	(2)	<1.0	09.0 >	< 1.0	< 0.50	<mark>. 4</mark>	< 2.0	<b>a</b> :	< 2.0	1			1	<del>8</del> :	:		1
Bromide		į	8.4	4./	3.2	4.4	4.3	8.C	4.4	4.5	1			1	1.4	!	1	:
Nitrate	10	(3)	<1.0	< 0.50	< 1.0	< 0.50	<b>43</b>	47	<b>40</b>	22	1	I		!	<b>40</b>	:	1	1
Phosphorus	-	2	<10 H	< 2.5	< 10	< 2.5	<10 H	< 0.50	< 10	< 10	1	1		;	< 10	1	1	1
Carbon Dioxide (CO <sub>2</sub> )	600	(3)	3100 260	2800 380	2700	2200	1600 170 H	1600	1600	1400 180	•	I		:	2200 110	1	1	1
Alkalinity (CaCO <sub>3</sub> )			264	395.6	408.9	527.8	180.7	188.4	186.9	201.7					125.5			
Bicarbonate (CaCO <sub>3</sub> )			- <u>7</u>	395.6	408.9	527.8	180.7	188.4	186.9	201.7			- M		125.5			
			101	2.222	2.001	01110		Linni	2.201	1.1.1.4		1	LVV	-	2.24			!

					Į										2			
	screening	Source		MW				MW	-32					ΜM	-33			
	Levels		Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Total Metals (mg/l):																		
Arsenic	0.01	(2)	<0.020	< 0.20	< 0.020	< 0.020	< 0.020	< 0.20	< 0.020	< 0.020	1		ΓW	1	< 0.020		1	-
Barium	2.0	(2)	0.066	0.073	0.17	0.068	<0.020	0.019	0.033	< 0.020	1		ΓM	1	0.021	1	1	1
Cadmium	0.005	(2)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	1	1	ΓM	1	< 0.0020	1	1	1
Chromium	0.05	(3)	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	1	1	ΓM	1	< 0.0060	1	1	1
Lead	0.015	(2)	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	1	ł	LW	1	< 0.0050	1	1	1
Selenium	0.05	(3)	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	1	1	ΓM	1	0.063	1	1	1
Silver	0.05	(3)	0.022	< 0.0050	< 0.0050	< 0.0050	0.011	< 0.0050	< 0.0050	< 0.0050	1	1	ΓM	1	< 0.0050	1	1	1
Mercury	0.002	(3)	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	1	1	ΓM	1	< 0.00020	1	1	1
Dissolved Metals (mg/l):																		
Arsenic	0.01	(2)	<0.020	0.023	< 0.020	< 0.020	< 0.020	0.012 J	< 0.020	< 0.020	1	1	ΓW	1	< 0.020	1	1	1
Barium	1.0	(3)	0.050	0.034	0.044	0.054	< 0.020	0.018 J	< 0.020	< 0.020	1	1	ΓM	1	< 0.020	1	1	1
Cadmium	0.005	(2)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	1	1	ΓM	1	< 0.0020	1	1	1
Calcium	'		740	690	550	590	320	340	340	310	1	1	ΓM	1	480	1	1	1
Chromium	0.05	(3)	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	1	1	ΓM	1	< 0.0060	1	1	1
Copper	-	(3)	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	1	1	ΓM	1	< 0.0060	1	1	1
Iron	-	(3)	0.89	1.3	0.74	0.13	<0.020	0.0052 J	< 0.020	< 0.020	1	1	ΓM	1	< 0.020	-	-	-
Lead	0.015	(2)	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	1		ΓM	1	< 0.0050	1	:	1
Magnesium	1		110	66	92	<b>93</b>	47	48	50	45	1	1	ΓM	1	69		-	1
Manganese	0.2	(3)	0.75	2.1	2.7	9	<0.0020	0.00085 J	< 0.0020	< 0.0020	1		ΓM	1	< 0.0020	-	1	1
Potassium			3.7	4.0	5.3	5.8	3.4	3.6	4	3.9	1		ΓM	1	5.5	-	1	1
Selenium	0.05	(3)	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	1	1	ΓM	1	0.097		-	1
Silver	0.05	(3)	0.018	< 0.0050	< 0.0050	< 0.0050	0.0082	0.0039 J	< 0.0050	< 0.0050	1	1	ΓM	1	< 0.0050	1	1	1
Sodium	1		890	800	720	730	770	800	810	750	1	1	ΓM	1	820			1
Uranium	0.03	(3)	< 0.10	< 0.10	< 0.10	< 0.10	< 10	< 0.10	< 0.10	< 0.10	1	1	ΓM	1	< 0.10		-	1
Zinc	10	(3)	<0.020	0.014 J	< 0.020	< 0.020	< 0.020	0.025	< 0.020	0.023	-		LW	-	< 0.020			
Total Petroleum Hydrocarbons (n	:(I/bu																	
Diesel Range Organics	0.0398	(9)	3.2	3.2	2.2	3.9	< 0.40	< 0.20	< 0.20	0.28	1	-	< 0.20	< 0.20	< 0.20	<0.20	:	<0.20
Gasoline Range Organics		1	< 0.050	< 0.050	0.2	0.25	< 0.050	< 0.050	< 0.050	0.19	1	1	< 0.050	< 0.050	< 0.050	< 0.050	1	< 0.050
Motor Oil Range Organics	0.0398	(9)	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	1	1	< 2.5	< 2.5	< 2.5	< 2.5	1	< 2.5

Notes:
(1) EPA - Regional Screening Levels (June 2017) - Tap Water
(2) EPA - Regional Screening Levels (June 2017) - MCL
(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less
(4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)
(5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds
(6) NMED groundwater screening level for unknown oil

		port	
TABLE 5	Downgradient Wells Analytical Summary	2018 Groundwater Remediation and Monitoring Annual Rep	MW-12

	Screening			MM	-11					MM	-12					MM	-34	
	Levels	source	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Aug-17	Aug-16	Aug-15
Volatile Organic Compounds (ug/L)																		
1,1,1,2-Tetrachloroethane	5.74	(4)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	-	< 1.0		< 1.0	-	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	60	(3)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	10	(3)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	1	< 2.0	1	< 2.0	ł	< 2.0	-	< 2.0	< 2.0	< 2.0	< 2.0
1,1,2-Trichloroethane	2	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	25 F	(3)	<ul> <li>&lt; 1.0</li> <li>&lt; 1.0</li> </ul>	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>	<pre>&lt; 1.0</pre>	<pre>&lt; 1.0</pre>	<pre>&lt; 1.0</pre>		<pre>&lt; 1.0</pre>		<pre>&lt; 1.0</pre>	:	<pre>&lt; 1.0</pre>		<ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>	<ul> <li>1.0</li> <li>1.0</li> </ul>	<pre>&lt; 1.0</pre>	<ul> <li>1.0</li> <li>1.0</li> </ul>
		2	× 10	× 1.0	< 1.0	× 1.0	< 1.0		< 1.0		< 1.0		< 1.0		< 1.0	< 1.0	<pre></pre>	< 1.0
1,2,3-Trichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	0.01	(4)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	< 2.0	< 2.0	< 2.0
1,2,4-Trichlorobenzene	70	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	15	(1)	67	97	120	390	< 1.0	:	< 1.0	-	< 1.0	ł	< 1.0	-	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	0.2	(2)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	< 2.0	< 2.0	< 2.0
1,2-Dibromoethane (EDB)	0.05	(2)	<ul> <li>1.0</li> <li>1.0</li> </ul>	< 1.0	< 1.0	< 1.0	< 1.0	:	< 1.0	1	<ul><li>1.0</li></ul>	1	< 1.0	1	< 1.0	< 1.0	<ul> <li>1.0</li> <li>1.0</li> </ul>	<ul> <li>1.0</li> <li>1.0</li> </ul>
1,2-Dichlorobenzene	009	(7)	v 1.0	< 1.0	v 1.0	v 1.0	0 V	:	v 1.0	:	<1.0	:	v 1.0	1	v 1.0	< 1.0	v 1.0	v 1.0
1,∠-Ulchloroemane (EUC) 1 2-Dichloropropane	n N	(7)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		<ul><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><l< th=""><th>   </th><th><ul><li>1.0</li><li>1.0</li></ul></th><th>   </th><th>&lt; 1.0</th><th>   </th><th>&lt; 1.0</th><th><pre>&lt; 1.0</pre></th><th>&lt; 1.0</th><th><ul><li>1.0</li><li>1.0</li></ul></th></l<></ul>		<ul><li>1.0</li><li>1.0</li></ul>		< 1.0		< 1.0	<pre>&lt; 1.0</pre>	< 1.0	<ul><li>1.0</li><li>1.0</li></ul>
1,3,5-Trimethylbenzene	12	(1)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	:	< 1.0	:	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	370	(1)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	:	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	75	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
1-Methylnaphthalene	11	(2)	15	15	17	16	< 4.0	1	< 4.0	1	< 4.0	i	< 4.0	1	< 4.0	< 4.0	< 4.0	< 4.0
2,2-Dichloropropane	•		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	< 2.0	< 2.0	< 2.0
2-Butanone	5560	(4)	< 10	< 10	< 10	< 10	< 10	1	< 10	1	< 10	1	< 10	1	< 10	< 10	< 10	< 10
2-Chlorotoluene	240	(1)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ł	< 1.0	1	< 1.0	ł	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone	'		< 10	< 10	< 10	< 10	< 10	1	< 10	1	< 10	1	< 10	1	< 10	< 10	< 10	< 10
2-Methylnaphthalene	36	(1)	<b>55</b>	11	<mark>2</mark>	<b>1</b> 1 1 2 1 2 1 2 1 3	< 4.0	1	< 4.0	1	< 4.0	1	< 4.0	1	0.28 J	< 4.0	< 4.0	< 4.0
	- 10			2. <mark></mark>	3.5	2	< 10		< 1.0		< 10		× 10		× 10	< 1.0	× 10	< 10
4-Methyl-2-pentanone			< 10	< 10	< 10	< 10	< 10	:	< 10	1	< 10	:	< 10	1	< 10	< 10	< 10	< 10
Acetone	14100	(4)	< 10	< 10	19	< 10	< 10	:	< 10	1	< 10	:	< 10	:	8.0 J	< 10	< 10	< 10
Benzene	5	(2)	99	29	9.9	14	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	62	(1)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	1.34	(4)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	33	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	7.54	(4)	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	< 3.0	< 3.0	< 3.0
Carbon Tetrachloride	200	(+)		012	010	012	012		10		10		017		010	012	017	0 1 1
Chlorobenzene	100	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	;	< 1.0	:	< 1.0	:	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	20900	(4)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0		< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	100	(3)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	20.3	(4)	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	1	< 3.0	!	< 3.0	-	< 3.0	1	< 3.0	< 3.0	< 3.0	< 3.0
cis-1,2-DCE	20	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	:	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	4.7	(4)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	!	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	1.68	(4)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	8.3	(1)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	197 700	(4)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0		< 1.0		< 1.0		< 1.0	< 1.0	<ul> <li>1.0</li> <li>1.0</li> </ul>	< 1.0
Ethylbenzene Hovochlorobuttadione	1 20	(7)			010		0.1 0	<	0.1 0	<ul><li>N.1 &gt;</li></ul>	0.1 0	0.1 >	0.1 0	< 1.0	0.1 0	0.1 0	0.10	0.1.0
Isopropylbenzene	447	(4)	<b>8</b>	2.2	2. 5	2 <mark>2</mark>	<ul><li>&lt; 1.0</li></ul>		<ul><li>&lt; 1.0</li></ul>	1	<ul><li>&lt; 1.0</li></ul>	1	< 1.0	1	3.8	3.8	2.6	<b>4.6</b>

					0 0 07						Iveboic							
	Screening	Source		MM	-11		-	-	-	MM	12	-	-		-	-MM	34	
	Levels		Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Aug-17	Aug-16	Aug-15
Methyl tert-butyl ether (MIBE)	143	(4)	1.3	2.4	2.5	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.57 J	0.48 J	< 1.0	< 1.0
Methylene Chloride	5	(2)	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	< 3.0	< 3.0	< 3.0
naprmalene n-Butvlhenzene	C0.1	(4)	90 2 1 . I	1 9 1	< 30	< 30	< 3.0		< 3.0		< 3.0		< 3.0		< 3.0	< 2.0	< 3.0	0.2 V V 2.0
n-Propylbenzene			20	8	<b>5</b>	<b>54</b>	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	<1.0	2.4	<b>1.5</b>	2.8
sec-Butylbenzene			9.1	7.8	7	12	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	0.40 J	1.9	2.6	4.5
Styrene	100	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	:	< 1.0	:	< 1.0	:	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene			7	1.9	2.4	2.5	< 1.0	1	< 1.0	1	< 1.0	!	< 1.0	1	1.7	1.6	1.7	1.7
Tetrachloroethene (PCE)	5	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	:	< 1.0	-	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	750	(3)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-DCE	100	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	4.71	(4)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene (TCE)	5	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0
I richlorofluoromethane	1136	(4)	<ul><li>1.0</li><li>1.0</li></ul>	<ul><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul>	<ul> <li>1.0</li> <li>1.0</li> </ul>	<pre>&lt; 1.0</pre>	<pre>&lt; 1.0</pre>	1	< 1.0	1	<pre>&lt; 1.0</pre>	1	<pre>&lt; 1.0</pre>		<pre>&lt; 1.0</pre>	<pre>&lt; 1.0</pre>	<ul> <li>1.0</li> <li>1.0</li> </ul>	<ul> <li>1.0</li> <li>1.0</li> <li>1.0</li> </ul>
VIII CIIIOIIUE Vulenes Total	620	(c) (c)	v - v	v 1.0	0.1 ×	<ul><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul>	× 1.0	1 1	<ul><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul>	1 1	<ul><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul>		<ul><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul>	1 1	0.1 v	v 1.0	v 1.0	v 1.0
Semi-Volatile Organic Compounds (	ua/L):		D	· ·	<b>D</b> .	2		C. I.V		D.1./		2.1			··· ·	2	2	2.
1.2.4-Trichlorobenzene	20	(2)	<50	1	< 10	1	< 10	+	+	;	< 10	1	ł	ł	+	+	+	:
1,2-Dichlorobenzene	600	(2)	<50	1	< 10	1	< 10	1	:	:	< 10	:	1	1	1	:	1	
1,3-Dichlorobenzene			<50	1	< 10	1	< 10	1	1	:	< 10	1	:	1	;	-	:	1
1,4-Dichlorobenzene	75	(2)	<50	1	< 10	1	< 10	1	:	:	< 10	:	:	1	1	:	:	1
1-Methylnaphthalene	11	(2)	<50	-	25	1	< 10	-	:	:	< 10	:	:	:				i
2,4,5-Trichlorophenol	1170	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	:	1	1
2,4,6-Trichlorophenol	11.9	(4)	<50	!	< 10	1	< 10	1	;	1	< 10	!	1	1	1	:	;	1
2,4-Dichlorophenol	45.3	(4)	<100	!	< 20	1	< 20	;	:	ł	< 20	1	ł	1	ł	:	:	ł
2,4-Dimethylphenol	354	(4)	<50	1	< 10	1	< 10	1	:	1	< 10	1	1	1	;	:	1	1
2,4-Dinitrophenol	38.7	(4)	<100	1	< 20	1	< 20	1	1	1	< 20	1	1	1	1	1	1	1
2,4-Dinitrotoluene	2.37	(4)	<50	1	< 10	1	< 10	1	1	:	< 10	1	;	1	;	1	1	1
2,6-Dinitrotoluene	0.485	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	1
2-Chloronaphthalene	733	(4)	<50	1	< 10	1	< 10	1	1	:	< 10	:	ł	1	1	1	ł	1
2-Chlorophenol	91	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	1
2-Methylnaphthalene	36	E	<50	1	<del>,</del>	1	< 10	1	1	:	< 10	1	1	1	1	1	1	1
2-Methylphenol	930	(1)	<50	1	< 10	1	< 10	1	1	:	< 10	!	1	1	1	1	1	1
Z-Nitroaniline	190	(1)	090	!	< 10	!	< 10	1	1	:	< 10	!	1	1	•	1	1	1
2-Nitroprierioi 3 3'-Dichlorohenzidine	- 1 25	(1)	C20		0 0		) ( )				0 v							
3+4-Methylphenol	930	()	<50	1	11	1	< 10	1	1	:	< 10	1	1		1	1	1	:
3-Nitroaniline			<50	1	< 10	1	< 10	1	1	1	< 10	;	1	1	1	:	1	1
4,6-Dinitro-2-methylphenol	1.52	(4)	<100	1	< 20	1	< 20	1	1	:	< 20	1	:	1	;	-	:	1
4-Bromophenyl phenyl ether	•		<50	1	< 10	:	< 10	1	:	:	< 10		1	:	1	:	1	-
4-Chloro-3-methylphenol			<50	!	< 10	1	< 10	1	;	1	< 10	!	1	1	1	:	;	1
4-Chloroaniline	3.7	(2)	<50	1	< 10	1	< 10	;	!	1	< 10	1	;	1	;	:	;	1
4-Chlorophenyl phenyl ether	'		<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	1
4-Nitroaniline	38	(2)	<50	1	< 10	1	< 10	1	1	:	< 10	1	1	1	1	1	1	1
4-Nitrophenol	1		<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	1
Acenaphthene	535	(4)	<50	1	< 10	1	< 10	:	:	:	< 10	:	:	1	:	:	:	1
Acenaphthylene	- 10	Ĺ	090	!	<ul> <li>10</li> <li>10</li> </ul>		<ul> <li>10</li> <li>10</li> </ul>	1	1	:	< 10	:	1	:	1	1	1	1
	100	(0)	200 - ED	1					-		VI > 10							1
Anthracene	1/2N	(4)		1	< 10		< 10	:	:	:	< 10	1	:	!	1	:	:	1

	Screening			MM	1					MM	-12					MM	-34	
	Levels	Source	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Aug-17	Aug-16	Aug-15
Azobenzene	1.2	(2)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	
Benzo(a)anthracene	0.12	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	
Benzo(a)pyrene	0.2	(2)	<50	1	< 10	1	< 10	1	1	1	< 10	:	1	1	1	1	1	
Benzo(b)fluoranthene	0.343	(4)	<50	:	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	1
Benzo(g,h,i)perylene			<50	1	< 10	1	< 10	!	1	1	< 10	1	1	1	1	1	1	
Benzo(k)fluoranthene	3.43	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	
Benzoic acid	75000	(1)	<100	1	< 20	1	< 20	1	1	1	< 20	1	1	1	1	1	1	-
Benzyl alcohol	2000	(1)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	-
Bis(2-chloroethoxy)methane	59	(1)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	
Bis(2-chloroethyl)ether	0.137	(4)	<50	1	< 10	1	< 10	!	1	1	< 10	1	:	1	1	1	1	
Bis(2-chloroisopropyl)ether	9.81	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	
Bis(2-ethvlhexvl)phthalate	9	(2)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1		1	1	1	-
Butyl benzyl phthalate	160	(2)	<50	1	< 10	1	< 10	1	1	:	< 10	:	1	1	1	1	1	1
Carbazole			<50	1	< 10	1	< 10	1	1	1	< 10	1	1		1	1	1	-
Chrysene	34.3	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	;	1		1	1	1	
Dibenz(a,h)anthracene	0.0343	(4)	<50	:	< 10	1	< 10	1	1	1	< 10	:	1	1	1	:	1	1
Dibenzofuran			<50	:	< 10	1	< 10		1	1	< 10	:	1	1	1	1	1	1
Diethyl phthalate	14800	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	
Dimethyl phthalate		Ì	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	1
Di-n-butyl phthalate	885	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	1
Di-n-octyl phthalate			<50	1	< 10	1	< 10	1	1	1	< 10	1	1		1	1	1	-
Fluoranthene	802	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	:	1		1	1	1	
Fluorene	288	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	:	1		1	-	1	
Hexachlorobenzene	0.0976	(4)	<50	:	< 10	1	< 10	1	1	1	< 10	1	1		1	1	1	-
Hexachlorobutadiene	1.387	(4)	<50		< 10	1	< 10	!	1	1	< 10	1	:		1	1	1	
Hexachlorocyclopentadiene	50	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	1	1	1	1	1	1	1
Hexachloroethane	3.28	(4)	<50	:	< 10	1	< 10	:	1	1	< 10	:	1	1	1	1	1	1
Indeno(1.2.3-cd)pvrene	0.343	(4)	<50	1	< 10	1	< 10	1	1	1	< 10	1	:		1	1	1	
	781	(4)	<50 <50		10		10		1	1	10	1	1		1		1	
Nahthalana Nahthalana	1.65		<b>2</b> 2	-	2		010	1	1		0	-	1			-	:	
	CO.	(†)	50		2													
	1.4	(+)	022				v 10	1	1	1	v 10		1				1	
	0.0017	(4)	002			:	v 10				v 10	:	•	:	:	:	:	
		$\hat{\mathbf{c}}$																
	170	(4)				1			!	1			1		1	1	1	
Dhananthrana		(+)	150		10		10				10							
Phenol	5760	(4)	<50	:	< 10 < 10	1	< 10 < 10	1	1	1	< 10	:	1		1	1	1	
Pvrene	117	(4)	<50	1	< 10	1	< 10	1	:	1	< 10	:	1		1	1	1	
Pyridine	20	(1)	<50	:	< 10	1	< 10	1	1	1	< 10	:	1	1	1	1	1	1
General Chemistry (mg/L):																		
Fluoride	1.6	(3)	0.28 J	0.37 J	0.41	0.35	0.31	1	0.33	1	0.45	1	0.63	1	0.55	0.54	0.38	0.56
Chloride	250	(3)	220	210	120	78	3.5	1	3.4	1	4.7	:	4	1	240	240	260	190
Nitrite	-	(2)	<1.0	< 0.50	< 1.0	< 0.10	<1.0	-	< 0.10	!	< 1.0	-	< 0.10	-	< 1.0	< 0.50	< 1.0	< 0.10
Bromide			3.5	3.2	0.92	0.15	<0.10	!	0.041 J	!	< 0.10	!	< 0.10	1	3.5	3.5	2.2	0.7
Nitrate	10	(3)	<1.0	< 0.50	< 1.0	0.15	<1.0	!	0.030 J	!	< 1.0	1	0.11	1	< 1.0	< 0.50	< 1.0	0.27
Phosphorus			< 2.5	< 2.5	2.8	< 0.50	< 0.50 H	!	< 0.50	!	< 0.50	-	< 0.50	!	< 2.5	< 2.5	< 2.5	< 0.50
Sulfate	600	(3)	2.2 J	1.3 J	7.6	5.7	45	!	44	1	48	-	79	:	30	3.6	340	23
Carbon Dioxide (CO <sub>2</sub> )			006	1100	1000	1000	140	ł	140	ł	130	ł	130	1	870 H	1000	930	820
Alkalinity (CaCO <sub>3</sub> )			1006	1140	1082	1038	155.4	1	155.6	I	149	1	148.4	1	026	1088	626	876
Bicarbonate (CaCO <sub>3</sub> )			1006	1140	1082	1038	155.4	1	155.6	1	149	1	148.4	1	970	1088	679	876

										•								
	Screening	Source		MM	-11					MM	-12					MW	34	
	Levels	2000	Aug-18	Aug-17	Aug-16	Aug-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Aug-17	Aug-16	Aug-15
Total Metals (mg/L):																		
Arsen	ic 0.01	(2)	<0.020	0.026	0.047	0.035	< 0.020	-	< 0.020	1	< 0.020	1	< 0.020	1	0.015	0.032	< 0.020	< 0.020
Bariu	m 2.0	(2)	0.75	0.75	96.0	0.92	0.064	-	0.043	-	0.36	1	0.13	-	0.42	0.93	0.56	0.78
Cadmiu	m 0.005	(2)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	-	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Chromiu	m 0.05	(3)	< 0.0060	< 0.0060	< 0.0060	< 0.0060	0.14	1	0.015	1	0.058	1	0.34	1	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Lea	id 0.015	(2)	< 0.0050	< 0.0050	0.028	0.0075	< 0.0050	1	< 0.0050	1	0.019	1	0.0064	1	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Seleniu	m 0.05	(3)	< 0.050	< 0.0050	< 0.050	< 0.050	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	< 0.0050	< 0.050	< 0.050
Silv	er 0.05	(3)	0.0040 J	< 0.050	< 0.0050	< 0.0050	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	0.0035 J	< 0.050	< 0.0050	< 0.0050
Mercu	ry 0.002	(3)	0.000087 J	< 0.00020	< 0.00020	< 0.00020	< 0.00020	-	< 0.00020	-	< 0.00020	-	< 0.00020		0.000092 J	< 0.00020	< 0.00020	< 0.00020
Dissolved Metals (mg/L):																		
Arsen	ic 0.01	(2)	0.021	0.017 J	0.033	< 0.020	< 0.020		< 0.020	1	< 0.020	1	< 0.020		< 0.020	< 0.020	< 0.020	< 0.020
Bariu	m 1.0	(3)	0.74	0.7	0.86	0.85	0.038	1	0.044	1	0.27	1	0.047	1	0.38	0.91	0.4	0.73
Cadmiu	m 0.005	(2)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Calciu	- u		120	130	87	96	42	1	46	1	58	1	48	1	120	120	150	93
Chromiu	m 0.05	(3)	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	1	< 0.0060	-	0.089	1	< 0.0060	-	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Coppe	er 1	(3)	< 0.0060	< 0.0060	0.015	< 0.0060	< 0.0060	1	< 0.0060	1	0.023	1	< 0.0060	1	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Irc	1 1	(3)	1.9	4.2	18	9.6	< 0.020	1	< 0.020	1	9.2	1	< 0.020	1	e	3.2	4.5	2.8
Les	id 0.015	(2)	< 0.0050	< 0.0050	0.027	0.006	< 0.0050	1	< 0.0050	1	0.032	1	< 0.0050	1	< 0.0050	< 0.0050	< 0.0050	0.005
Magnesiu	- u		27	27	21	22	6.5	1	6.9	1	11	1	6.9	1	23	20	30	16
Manganes	ie 0.2	(3)	2	2.1	1.8	1.5	0.0077	1	0.0066	1	2.1	1	0.03	1	3.8	3.7	3.6	3.2
Potassiu	י נו		1.8	1.7	2.8	1.5	<1.0	:	0.58 J	-	1.6	-	< 1.0	-	1.2	1.1	2.1	1.3
Seleniu	m 0.05	(3)	<0.050	0.043 J	< 0.050	< 0.050	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	< 0.050	< 0.050	< 0.050
Silvi	er 0.05	(3)	0.0031 J	< 0.0050	< 0.0050	< 0.0050	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	0.0027	< 0.0050	< 0.0050	< 0.0050
Sodiu	- ۳		440	440	410	390	31	1	30	1	32	1	31	1	440	440	490	380
Uraniu	m 0.03	(3)	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	< 0.10	< 0.10	< 0.10
Zir	10 10	(3)	<0.020	0.093	0.063	< 0.020	<0.020	-	0.047	-	0.1	-	< 0.020		0.046	0.041	< 0.020	< 0.020
Total Petroleum Hydrocarbons (m	ig/L):																	
Diesel Range Organic	ss 0.0398	(9)	0.45	1.4	1.8	1.5	< 0.40	<0.40	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.4	1.1	0.89	0.56
Gasoline Range Organic	۰ ۲	•	1.3	0.98	1.4	2.4	< 0.050	<0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	1.2	1.1	0.87	1.3
Motor Oil Range Organic	SS 0.0398	(9)	<2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5

 Notes:

 (1) EPA - Regional Screening Levels (June 2017) - Tap Water

 (2) EPA - Regional Screening Levels (June 2017) - MCL

 (3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

 (4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)

 (5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds

 (6) NMED groundwater screening level for unknown oil

 (6) NMED groundwater screening level for unknown oil

 (7) MED groundwater screening level for unknown oil

 (6) NMED groundwater screening level for combined Nitrate (As N) + Nitrite (As N) to meet hold time

 (7) Level - Tap Water x 10 for contains separate phase

\*\*

= Analytical result exceeds the respective screening level.
 = 6/27/13 modification on FWGWM Plan to remove MW-8 and replace with MW-52.
 = Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase

	Screening					MM	-35							MW	-37			
	Levels	aonice	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Volatile Organic Compounds (ug/L)																		
1,1,1,2-Tetrachloroethane	5.74	(4)	< 1.0	1	< 1.0		< 1.0		< 1.0	1	< 1.0		< 1.0		< 1.0	:	< 1.0	-
1,1,1-Trichloroethane	60	(3)	< 1.0	1	< 1.0	1	< 1.0	:	< 1.0	1	< 1.0	ł	< 1.0	ł	< 1.0	ł	< 1.0	ł
1,1,2,2-Tetrachloroethane	10	(3)	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	:
1,1,2-Trichloroethane	2	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
1,1-Dichloroethane	25	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	<ul> <li>1.0</li> <li>1.0</li> </ul>	1	< 1.0	1	< 1.0	1	< 1.0	1
1, 1-Dichloroethene	o	(3)	0.1	:	0.1	ł	0.1	:	0.1	;	0.1	;	0.1	ł	0.1	:	0.0	:
1,1-UICNIOropropene			0.1.0	1	< 1.0	1	< 1.0	!	<ul><li>1.0</li></ul>	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
1,2,3-Irichlorobenzene		:	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	:	< 1.0	
1,2,3-Trichloropropane	0.01	(4)	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1
1,2,4-Trichlorobenzene	20	(2)	< 1.0	1	< 1.0	;	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	;	< 1.0	1	< 1.0	:
1,2,4-Trimethylbenzene	15	(1)	< 1.0	1	0.77 J	;	25	1	19	1	< 1.0	1	< 1.0	;	< 1.0	1	< 1.0	:
1,2-Dibromo-3-chloropropane	0.2	(2)	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	-	< 2.0	-	< 2.0	1	< 2.0	:
1,2-Dibromoethane (EDB)	0.05	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	ł	< 1.0	1	< 1.0	:	< 1.0	;
1,2-Dichlorobenzene	600	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
1,2-Dichloroethane (EDC)	2	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
1,2-Dichloropropane	2	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
1,3,5-Trimethylbenzene	12	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
1,3-Dichlorobenzene	'		< 1.0	1	< 1.0	:	< 1.0	!	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-
1,3-Dichloropropane	370	(1)	< 1.0	1	< 1.0	-	< 1.0	:	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	-	< 1.0	-
1,4-Dichlorobenzene	75	(2)	< 1.0	-	< 1.0	1	< 1.0	!	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	!	< 1.0	-
1-Methylnaphthalene	11	(2)	< 4.0	1	< 4.0	1	< 4.0	1	< 4.0	!	< 4.0	1	< 4.0	1	< 4.0	!	< 4.0	!
2,2-Dichloropropane	1		< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	!	< 2.0	1
2-Butanone	5560	(4)	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1
2-Chlorotoluene	240	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
2-Hexanone	1		< 10	1	< 10	-	< 10		< 10	1	< 10	-	< 10	1	< 10	!	< 10	1
2-Methylnaphthalene	36	(1)	< 4.0	1	< 4.0	1	< 4.0	1	< 4.0	1	< 4.0	1	< 4.0	1	< 4.0	1	< 4.0	1
4-Chlorotoluene	250	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	:
4-Isopropyltoluene	'		< 1.0	1	< 1.0	:	1:1	:	1.1	1	< 1.0	-	< 1.0	-	< 1.0	!	< 1.0	:
4-Methyl-2-pentanone	1		< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	!	< 10	!
Acetone	14100	(4)	11	1	< 10	-	< 10		< 10	1	< 10	1	1.0 J	-	< 10	1	< 10	-
Benzene	5	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	62	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	!	< 1.0	-	< 1.0	1	< 1.0	!	< 1.0	1
Bromodichloromethane	1.34	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	!	< 1.0	!
Bromoform	33	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	!	< 1.0	:
Bromomethane	7.54	(4)	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1
Carbon disulfide	810	(4)	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	1	< 10	!	< 10	;
Carbon Tetrachloride	2	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
Chlorobenzene	100	(2)	< 1.0	1	< 1.0	:	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	:
Chloroethane	20900	(4)	< 2.0	:	< 2.0	:	< 2.0	1	< 2.0		< 2.0	1	< 2.0	1	< 2.0	:	< 2.0	:
Chloroform	100	(3)	< 1.0	:	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	
Chloromethane	20.3	(4)	< 3.0	:	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1
cis-1,2-DCE	20	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
cis-1,3-Dichloropropene	4.7	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
Dibromochloromethane	1.68	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
Dibromomethane	8.3	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
Dichlorodifluoromethane	197	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
Ethylbenzene	700	(2)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachiorobutagiene	1.39	(4)	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	-	< 1.0	:
Isopropylbenzene	447	(4)	< 1.0	-	2.3	!	4.7		1.5		< 1.0	-	< 1.0		< 1.0	-	< 1.0	

	Screening	COLLOS				MM	-35							-MM	37			
	Levels	2001100	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Methyl tert-butyl ether (MTBE)	143	(4)	< 1.0	< 1.0	0.6 J	0.0012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	5	(2)	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	-	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	ł
Naphthalene	1.65	(4)	< 2.0	-	< 2.0	1	< 2.0	1	< 2.0	-	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	ł
n-Butylbenzene			< 3.0	1	0.15 J	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	-	< 3.0	1
n-Propylbenzene	ı		< 1.0	ł	1.8	1	4.1	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	ł
sec-Butylbenzene	•		< 1.0	1	1.3	1	3.6	1		1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
Styrene	100	(2)	< 1.0	1	< 1.0	!	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	ł
tert-Butylbenzene	1		< 1.0	-	1.4	1	1.9	1	< 1.0	1	< 1.0	!	0.14 J	1	< 1.0	1	< 1.0	-
Tetrachloroethene (PCE)	5	(2)	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-
Toluene	750	(3)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-DCE	100	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1
trans-1,3-Dichloropropene	4.71	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	-
Trichloroethene (TCE)	5	(2)	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	-
Trichlorofluoromethane	1136	(4)	< 1.0	1	< 1.0	:	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
Vinyl chloride	-	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
Xylenes, Total	620	(3)	< 1.5	<1.5	< 1.5	<1.5	< 1.5	<1.5	< 1.5	<1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Semi-Volatile Organic Compounds (L	ng/L):																	
1,2,4-Trichlorobenzene	70	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1,2-Dichlorobenzene	600	(2)	1	;	1	1	1	1	1		1	1	1	1	1	1	1	:
1,3-Dichlorobenzene			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1,4-Dichlorobenzene	75	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-Methylnaphthalene	11	(2)	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1
2,4,5-Trichlorophenol	1170	(4)	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1
2,4,6-Trichlorophenol	11.9	(4)	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1
2,4-Dichlorophenol	45.3	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2,4-Dimethylphenol	354	(4)	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1
2,4-Dinitrophenol	38.7	(4)	1	1	1	1	1	1	1		1	1	1	1	1	1	1	ł
2,4-Dinitrotoluene	2.37	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2.6-Dinitrotoluene	0.485	(4)	1	1	-	1	1	1	1		1	1	1	1	:	1	1	1
2-Chloronaphthalene	733	(4)	1	1	1	1	1	1	1		1	1	1	1	1	1	1	:
2-Chlorophenol	91	(4)	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1
2-Methylnaphthalene	36	(1)	-	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1
2-Methylphenol	930	(1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2-Nitroaniline	190	(1)		-	1	!	1	1	1	;	1	1	1	1	1	!	:	1
2-Nitrophenol			-	1	1	ł	;	1	1	1	1	1	1	:	1	1	;	:
3,3 '-Dichlorobenzidine	1.25	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	;
3+4-Methylphenol	930	(1)	1	1	1	1	1	1	1	:	1	1	1	1	;	;	1	:
3-Nitroaniline	•		1	1	-	1	;	1	1	1	1	1	1	;	1	1	1	1
4,6-Dinitro-2-methylphenol	1.52	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	!	1	ł
4-Bromophenyl phenyl ether			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4-Chloro-3-methylphenol	•		-	1	-	1	1	1	1	1	1	1	1	;	1	1	1	1
4-Chloroaniline	3.7	(2)		-	:	!	1	1	1	1	1	1	:	1	1	:	:	-
4-Chlorophenyl phenyl ether			-	-	-	!	;	1	;	1	1	-	;	;	;	:	;	;
4-Nitroaniline	38	(2)	1	1	1	1	1	1	1	:	1	1	1	1	;	;	1	:
4-Nitrophenol			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Acenaphthene	535	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ł
Acenaphthylene	•		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aniline	130	(2)	1		1	1	1		1			1	1	1	1	1	1	:
Anthracene	1720	(4)		-	-	!	1	!	1	1		:	1		:	-		1

	Screening	c				MM	-35							-WM	-37			
	Levels	source	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Azobenzene	1.2	(5)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Benzo(a)anthracene	0.12	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Benzo(a)pyrene	0.2	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-
Benzo(b)fluoranthene	0.343	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Benzo(g,h,i)perylene	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Benzo(k)fluoranthene	3.43	(4)	1	1	1	1	1	1	1	1	1	:	1	1	1	1	1	:
Benzoic acid	75000	(1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-
Benzyl alcohol	2000	(1)	1	1	1	1	1	1	1	1	1	!	1	ł	1	1	1	
Bis(2-chloroethoxy)methane	59	(1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bis(2-chloroethyl)ether	0.137	(4)	1	1	;	1	1	1	1	1	1	1	1	1	1	1	1	1
Bis(2-chloroisopropyl)ether	9.81	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bis(2-ethvlhexvl)phthalate	9	(2)	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1
Butvl benzvl phthalate	160	(2)	1	1	1	:	1	1	:		1	:	1	1	1	1	1	1
Carbazole			1	1	1	1	1	1	1		:	1	1	1	1	:	1	:
Chrysene	34.3	(4)	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1
Dibenz(a_h)anthracene	0.0343	(4)	1	1	1	1	1	1	1		1	:	1	1	1	1	1	1
Dibenzofuran			:	1	ł	:	1	1	:		:	:	1	:	1	:	1	:
Diethvl ohthalate	14800	(4)	1	:	1	1	1	1	:		1	1	1	:	:	1	1	:
Dimethyl nhthalate	-		1			1	1	1					1			1	1	
Di n hutud nhtholoto	OOF	(4)																
	000	(+)		1	•	1						1				1		
Di-n-octyl phthalate	- 00		1	1	1	!	1	!	!	1	1	1	1	!	1	1	1	!
Fluoranthene	802	(4)	1	1	ł	1	1	1	1	1	1	1	1	1	1	1	1	1
Fluorene	288	(4)	1	!	1	1	1	1	1	1	1	1	1	1	!	1	!	:
Hexachlorobenzene	0.0976	(4)	1	!	1	1	1	1	1	1	1	!	1	!	1	;	1	!
Hexachlorobutadiene	1.387	(4)	ł	ł	ł	ł	ł	!	ł	1	1	ł	ł	ł	1	1	!	!
Hexachlorocyclopentadiene	50	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hexachloroethane	3.28	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Indeno(1,2,3-cd)pyrene	0.343	(4)	1	ł	1	1	1	ł	1	1	1	1	1	1	1	1	1	1
Isophorone	781	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Naphthalene	1.65	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nitrobenzene	1.4	(4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-
N-Nitrosodimethylamine	0.0017	(4)	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	
N-Nitrosodi-n-propylamine	0.11	(2)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	:
N-Nitrosodiphenylamine	0.0049	(4)	1	1	1	1	1	1	1	1	1	!	1	!	1	1	1	1
Pentachlorophenol	170	(4)		1	-	!	1	-	1	-	1	1	1		1	1	:	-
Phenanthrene	-	(4)	1	-	1	1	1	!	1	1	1	1	1	1	-	1	!	-
Phenol	5760	(4)	1	1	1	1	1	1	1	!	1	1	1	:	!	-	1	:
Pyrene	117	(4)	1	1	1	1	1	1	1	1	1	1	1	;	1	;	1	1
Pyridine	20	(1)	1	!	;	1	1	-	-	-	1	1	1	!	1	!	-	-
General Chemistry (mg/L):																		
Fluoride	1.6	(3)	<0.50	1	0.46	1	0.47	1	0.55	1	0.44	1	0.45	1	0.6	1	0.59	!
Chloride	250	(3)	210	1	220	1	240	!	180		180	1	150	1	220	1	220	!
Nitrite	۲	(2)	<1.0	;	< 0.10	1	< 1.0	1	< 0.10	1	<1.0	1	0.25 J	1	< 1.0	1	< 0.10	1
Bromide	1		2.8	-	0.71	1	2.2	1	0.74	1	2.6	1	2.5	1	2.9	-	1.2	!
Nitrate	10	(3)	<1.0	-	0.022 J	1	< 1.0	1	0.25	1	<1.0	1	0.25 J	1	< 1.0	1	< 0.10	1
Phosphorus	I		<2.5 H	-	< 0.50	1	< 0.50	1	< 0.50	1	<0.50 H	1	< 2.5	1	< 0.50	;	< 0.50	!
Sulfate	600	(3)	16	ł	1.5	1	14	1	11	!	420	1	720	1	270	1	110	!
Carbon Dioxide (CO <sub>2</sub> )	•		940 H	ł	830	1	850	ł	790	1	640 H	ł	450	1	690	1	770	1
Alkalinity (CaCO <sub>3</sub> )			1004	1	905.4	1	<del>305</del>	1	845	1	703	1	503.5	1	766.7	1	855.5	1
Bicarbonate (CaCO <sub>3</sub> )			1004	1	905.4	1	905	1	845	1	703	1	503.5	1	766.7	1	855.5	1

	Screening	Source				MM	-35							MM	1-37			
	Levels	201200	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Fotal Metals (mg/L):																		
Arsenic	0.01	(2)	<0.020		0.076		0.047		0.11		<0.020	-	0.019 J		< 0.020		< 0.020	1
Barium	2.0	(2)	0.94	1	0.92	1	1.3	1	1.6	1	0.10	1	0.49	1	0.27	1	0.42	1
Cadmium	0.005	(2)	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1
Chromium	0.05	(3)	<0.0060		0.016	-	< 0.0060	1	< 0.0060	1	<0.0060	1	0.022		< 0.0060	1	< 0.0060	-
Lead	0.015	(2)	<0.0050	1	0.005 J	1	0.0098	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	0.0068	1	< 0.0050	1
Selenium	0.05	(3)	< 0.050		< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1
Silver	0.05	(3)	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1
Mercury	0.002	(3)	<0.00020	1	0.000044 J	1	< 0.00020	1	< 0.00020	1	< 0.00020	1	< 0.00020	1	< 0.00020	1	< 0.00020	1
Dissolved Metals (mg/L):																		
Arsenic	0.01	(2)	< 0.020	1	0.036		0.038	1	0.038	1	< 0.020	1	< 0.020	1	< 0.020	1	< 0.020	1
Barium	1.0	(3)	0.79	1	0.57	1	0.82	1	1.6	1	0.079	1	0.11	1	0.22	1	0.4	1
Cadmium	0.005	(2)	< 0.0020	:	< 0.0020	1	< 0.0020	1	< 0.0020	:	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1
Calcium			120	1	120	1	120	1	110	1	120	1	110	1	86	1	92	1
Chromium	0.05	(3)	< 0.0060	1	< 0.0060	-	< 0.0060		< 0.0060	-	< 0.0060	-	< 0.0060	-	< 0.0060	!	< 0.0060	-
Copper	-	(3)	< 0.0060	1	< 0.0060	1	< 0.0060	1	< 0.0060	1	< 0.0060	1	< 0.0060	1	< 0.0060	1	< 0.0060	1
Iron	-	(3)	0.13	1	1.7	-	3.4	1	0.1	-	0.20	-	0.13	-	1.6	1	< 0.020	-
Lead	0.015	(2)	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1
Magnesium			22	1	21	1	21	1	21	1	21	1	21	1	19	1	21	1
Manganese	0.2	(3)	1.9	1	1.8	-	2.5	-	2.4	1	1.1	1	0.89	-	0.96	!	-	-
Potassium	1		2.9	1	2.9	1	2.8	1	2.5	-	2.7	-	2.7	-	2.9	1	2.8	-
Selenium	0.05	(3)	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1
Silver	0.05	(3)	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	1	< 0.0050	-	< 0.0050	-	< 0.0050	1
Sodium	1		380	1	370	1	380	1	340	1	430	-	460	-	460	1	420	-
Uranium	0.03	(3)	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	-	< 0.10	-	< 0.10	-
Zinc	10	(3)	<0.020	1	0.037		< 0.020	-	0.023	-	<0.020	1	0.018 J		< 0.020		< 0.020	
Fotal Petroleum Hydrocarbons (mg	(L):																	
Diesel Range Organics	0.0398	(9)	<0.40	1	0.5	0.44	0.62	0.55	0.38	0.55	< 0.40	<0.40	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.45
Gasoline Range Organics	1	•	0.30	1	0.34	0.81	0.52	0.25	0.54	0.25	< 0.050	<0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Motor Oil Range Organics	0.0398	(9)	< 2.5	1	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	<2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5

Notes:
(1) EPA - Regional Screening Levels (June 2017) - Tap Water
(2) EPA - Regional Screening Levels (June 2017) - MCL
(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less
(4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)
(5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds
(6) NMED groundwater screening level for unknown oil
= No screening level available
= Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
= Analysis not required and/or well contains separate phase
= Analysical result exceeds the respective screening level.

= 6/27/13 modification on FWGWM Plan to remove MW-8 and replace with MW-52. = Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase

puing					MW-3	~			
els	source	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
74	(4)	< 1.0	;	< 1.0	;	< 1.0	1	< 1.0	1
0	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
0	(3)	< 2.0	;	< 2.0	1	< 2.0	1	< 2.0	1
	(2)	< 1.0	;	< 1.0	1	< 1.0	1	< 1.0	1
2	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
	(3)	< 1.0	1	< 1.0	1	< 1.0	ł	< 1.0	ł
		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
1	(4)	< 2.0	1	< 2.0	1	< 2.0	1	< 2.0	1
0	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
2	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
2	(2)	< 2.0	1	< 2.0	:	< 2.0	1	< 2.0	1
35	(2)	< 1.0	1	< 1.0	:	< 1.0	1	< 1.0	1
0	(2)	< 1.0	-	< 1.0		< 1.0		< 1.0	-
	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-
	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	!
2	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	-
		< 1.0	1	< 1.0	1	< 1.0	!	< 1.0	1
0	(1)	< 1.0	1	< 1.0	-	< 1.0	!	< 1.0	-
5	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
-	(2)	< 4.0	1	< 4.0	1	< 4.0	1	< 4.0	-
		< 2.0	ł	< 2.0	!	< 2.0	1	< 2.0	-
60	(4)	< 10	:	< 10	;	< 10	1	< 10	-
Ģ	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
		< 10	;	< 10	;	< 10	;	< 10	1
6	(1)	< 4.0	1	< 4.0	1	< 4.0	1	< 4.0	-
0	(1)	< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	1
		< 1.0	;	< 1.0	:	< 1.0	1	< 1.0	-
		< 10	1	< 10	1	< 10	1	< 10	1
00	(4)	2.6 J	;	2.6 J	;	< 10	1	< 10	1
	(2)	< 1.0	<1.0	< 1.0	<1.0	< 1.0	<1.0	< 1.0	<1.0
2	(1)	< 1.0	;	< 1.0	;	< 1.0	1	< 1.0	1
34	(4)	< 1.0	;	< 1.0	;	< 1.0	!	< 1.0	-
3	(2)	< 1.0	1	< 1.0	1	< 1.0	!	< 1.0	ł
54	(4)	< 3.0	;	< 3.0	;	< 3.0	1	< 3.0	-
0	(4)	< 10	;	< 10	;	< 10	1	< 10	1
	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	ł
0	(2)	< 1.0	;	< 1.0	1	< 1.0	1	< 1.0	1
00	(4)	< 2.0	1	< 2.0	ł	< 2.0	ł	< 2.0	1
0	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
e.	(4)	< 3.0	ł	< 3.0	;	< 3.0	1	< 3.0	1
0	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
2	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
80	(4)	< 1.0	ł	< 1.0	1	< 1.0	1	< 1.0	1
e	(1)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
2	(4)	< 1.0	!	< 1.0	1	< 1.0	1	< 1.0	ł
0	(2)	< 1.0	<1.0	< 1.0	<1.0	< 1.0	<1.0	< 1.0	<1.0
130	(4)	< 1.0	1	< 1.0	1	<ul> <li>1.0</li> <li>4.0</li> </ul>	1	< 1.0	1
1	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1

	Scree
Volatile Organic Compounds (ug/L)	
1,1,1,2-Tetrachloroethane	5.7
1,1,1-Trichloroethane	00
1, 1, 2, 2 - Teu admotoethane	2 2
1,1-Dichloroethane	26
1,1-Dichloroethene	2
1,1-Dichloropropene	'
1,2,3-Trichlorobenzene	· (
1,2,3-I richloropropane	0.0
1,2,4-1110100061126116 1.2.4-Trimethylbenzene	
1,2-Dibromo-3-chloropropane	0.0
1,2-Dibromoethane (EDB)	0.0
1,2-Dichloroethane (EDC)	200
1,2-Dichloropropane	2
1,3,5-Trimethylbenzene	12
1,3-Dichlorobenzene	'
1,3-Dichloropropane	37
1,4-Dichlorobenzene	12
1-Methylnaphthalene	-
	- 22 220
2-Dutatione 2-Chlorotolitene	24
2-Hexanone	i '
2-Methylnaphthalene	36
4-Chlorotoluene	25
4-Isopropyltoluene	•
4-Methyl-2-pentanone	'
Acetone	141
Benzene	2
Bromobenzene	62
BIOILIOUICIIIOUICIIIOUILIEULIALIE Bromoform	<u>.   .</u>
Bromomethane	7.5
Carbon disulfide	81
Carbon Tetrachloride	2
Chlorobenzene	ē
Chloroethane	209
Chloroform	
	۲ ۲
CIS-1,2-UUE cis-1 3-Dichlorononana	
Dibromochloromethane	1.6
Dibromomethane	ŝ
Dichlorodifluoromethane	19
Ethylbenzene	20
Hexachlorobutadiene	- - -
Isopropylbenzene	44

aning	Source				MW-38				
els	201000	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
ę	(4)	< 1.0	< 1.0	0.41 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	(2)	< 3.0	1	< 3.0	1	< 3.0	1	< 3.0	1
35	(4)	< 2.0	1	< 2.0	-	< 2.0	1	< 2.0	1
		< 1.0	;	< 1.0	:	< 3.0	:	< 3.0	-
		< 3.0	1	< 3.0	-	< 1.0	:	< 1.0	1
		< 1.0	1	< 1.0	-	< 1.0	1	< 1.0	1
0	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
	,	< 1.0	:	0.48 J	1	< 1.0	:	< 1.0	-
	(2)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
0	(3)	< 1.0	<1.0	< 1.0	<1.0	< 1.0	<1.0	< 1.0	<1.0
0	(2)	< 1.0	-	< 1.0	-	< 1.0	1	< 1.0	-
71	(4)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
	(2)	< 1.0	1	< 1.0	-	< 1.0	:	< 1.0	1
36	(4)	< 1.0	1	< 1.0	1	< 1.0	:	< 1.0	1
	(3)	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1
0	(3)	< 1.5	<1.5	< 1.5	<1.5	< 1.5	<1.5	< 1.5	<1.5
0	(2)	< 10	-	1	-	< 10	-	-	1
0	(2)	< 10	1	ł	1	< 10	1	1	1
		< 10	1	1	1	< 10	:	1	1
2	(2)	< 10	1		-	< 10	:	1	1
-	(2)	< 10	1	-	-	< 10	-	1	1
20	(4)	< 10	-	!	!	< 10	1	-	-
<u>ල</u>	(4)	< 10	1	1	!	< 10	1	-	1
с.	(4)	< 20	1	-	!	< 20	-	1	1
4	(4)	< 10	1	1	1	< 10	1	1	1
2.7	(4)	< 20	1	:	!	< 20	!	-	1
37	(4)	< 10	-	1	:	< 10	!	-	:
85	(4)	< 10	1	1	-	< 10	!	1	1
33	(4)	< 10	1	-	-	< 10	!	1	1
-	(4)	< 10	1	1	-	< 10	!	1	1
9	(1)	< 10	1	1	-	< 10	!	1	1
02	(1)	< 10	1	-	-	< 10	!	1	1
0	(1)	< 10	1	1	!	< 10	!	1	1
		< 10	-	!	!	< 10	1	-	-
22	(4)	< 10	1	1	-	< 10	1	1	-
	(1)	< 10	1	ł	!	< 10	1	1	1
		< 10	1	1	-	< 10	1	1	-
52	(4)	< 20	1	1	!	< 20	!	-	1
		< 10	-	1	:	< 10	!	-	:
		< 10	;	ł	:	< 10	!	-	:
~	(2)	< 10	1	1	:	< 10	1	-	-
		< 10	1	1	!	< 10	!	-	1
8	(2)	< 10	;	:	:	< 10	!	-	:
		< 10	;	1	1	< 10	!	;	1
22	(4)	< 10	1	1	:	< 10	!	1	-
		< 10	1	1	1	< 10	1	1	1
õ	(2)	< 10	1	1	1	< 10	1	1	1
20	(4)	< 10	1	1	!	< 10	!	1	!

1/2	Anthracene
13	Aniline
'	Acenaphthylene
53	Acenaphthene
Ϋ́,	4-Nitroahiine 4-Nitroahenol
1	4-Chlorophenyl phenyl ether
3.7	4-Chloroaniline
	4-Chloro-3-methylphenol
1.5	4,6-Dinitro-2-methylphenol
•	3-Nitroaniline
63	3+4-Methylphenol
1.2	3,3 '-Dichlorobenzidine
	2-Nitrophenol
0	2-Meuryphenor
en en	2-Methylnaphthalene
91	2-Chlorophenol
13	2-Chloronaphthalene
0.4	2.6-Dinitrotoluene
38.	2,4-Dinitrophenol
35	2,4-Dimethylphenol
45.	2,4-Dichlorophenol
11	2,4,5-1 richlorophenol
÷	1-Methylnaphthalene
75	1,4-Dichlorobenzene
•	1,3-Dichlorobenzene
09	1,2-Dichlorobenzene
.( <b></b> )2	Selli-Volatile Organic Compounds
62	Xylenes, Total
-	Vinyl chloride
113	Trichlorofluoromethane
2	Trichloroethene (TCE)
47	trans-1,2-UCE trans-1 3-Dichloropronene
75	Toluene
5	Tetrachloroethene (PCE)
	tert-Butylbenzene
10	Styrene
	sec-Butvlbenzene
	n-Butylbenzene n-Pronvlhenzene
1.6	Naphthalene
2	Methylene Chloride
14	Methyl tert-butyl ether (MTBE)
Screel	
,	

sning					MW-3					
els	aonnoe	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	
7	(2)	< 10	-	-	1	< 10	-		-	
12	(4)	< 10	1	ł	1	< 10	1	1	1	
5	(2)	< 10	1	1	1	< 10	-	-	1	
43	(4)	< 10	1		1	< 10	1	1	1	
		< 10	1		1	< 10	-	;	-	
<del>1</del> 3	(4)	< 10	1	1	1	< 10	1	1	1	
00	(1)	< 20	1	1	1	< 20	1	1	1	
8	(1)	< 10	1	1	1	< 10	1	1	1	
6	(1)	< 10	1	1	1	< 10	1	1	1	
37	(4)	< 10	1	1	1	< 10	-	-	1	
31	(4)	< 10	1	1	1	< 10	1	1	1	
	(2)	< 10	1	1	1	< 10	1	1	1	
0	(2)	< 10	1		1	< 10	-	1	1	
		< 10	1	1	1	< 10	1	1	1	
က္	(4)	< 10	1	!	1	< 10	1	1	1	
343	(4)	< 10	-	1	1	< 10	-	-	-	
		< 10	1		1	< 10	:	1	-	
00	(4)	< 10	-	1	1	< 10	-	-	-	
		< 10	1		1	< 10	1	1	1	
5	(4)	< 10	1		1	< 10	:	1	-	
		< 10	1		1	< 10	1	1	1	
5	(4)	< 10	1	1	1	< 10	:	1	1	
80	(4)	< 10	1		1	< 10	1	1	1	
976	(4)	< 10	1	1	1	< 10	1	1	1	
87	(4)	< 10	1	1	1	< 10	1	1	1	
0	(4)	< 10	1	1	1	< 10	1	1	1	
8	(4)	< 10	1	1	1	< 10	1	1	1	
43	(4)	< 10	-	1	1	< 10	-	;	:	
	(4)	< 10	ł	1	ł	< 10	ł	ł	:	
35	(4)	< 10	ł	1	1	< 10	1	-	1	
4	(4)	< 10	1	1	1	< 10	1	1	1	
017	(4)	< 10	1	1	1	< 10	1		1	
11	(2)	< 10	1	1	1	< 10	1	1	1	
049	(4)	< 10	1	1	1	< 10	1	1	1	
0	(4)	< 20	-	1	1	< 20	-	;	:	
	(4)	< 10	;	1	1	< 10	-	ł	:	
00	(4)	< 10	1	1	1	< 10	1	ł	1	
~	(4)	< 10	1	1	1	< 10	1	1	1	
0	(1)	< 10	1	1	ł	< 10	:	ł	:	
u u	(3)			0 62		0 64		0.84		
	() (C)	140		100		75		30		
	(2)	<1.0	1	0.17 J		< 1.0	:	< 0.10	-	
		1.9	1	1.4	1	0.98	1	0.38	1	
0	(3)	<1.0	1	0.17 J	1	< 1.0	;	< 0.10	-	
		<0.50 H	1	< 2.5	1	< 0.50	-	< 0.50	-	
0	(3)	21	1	3.4	1	4.6	ł	30	!	
		630 H	1	530	1	450	1	310	ł	
		682.4	ł	587.7	1	497	ł	345.6	1	
		682.4	1	587.7	1	497	1	345.6	1	
					_					

1	Bicarbonate (CaCO <sub>3</sub> )
1	Alkalinity (CaCO <sub>3</sub> )
1	Carbon Dioxide (CO <sub>2</sub> )
60	Sulfate
- '	Phosphorus
'	Bromide
-	Nitrite
25	Chloride
1	General Chemistry (mg/L): Elinarida
50	Pyridine
11	Pyrene
226	Phenol
	Phenanthrene
0.00	N-Nitrosodiphenylamine Domeschloronhond
0.1	N-Nitrosodi-n-propylamine
0.00	N-Nitrosodimethylamine
	Nitrobenzene
1 6	Isophorone Nanhthalana
0.3	Indeno(1,2,3-cd)pyrene
3.2	Hexachloroethane
1.3	Hexacniorobutadiene
0.09	Hexachlorobenzene
28	Fluorene
80	Fluoranthene
3	Di-n-octvl phthalate
' 8	Dimethyl phthalate
148	Diethyl phthalate
•	Dibenzofuran
0.03	Dibenz(a,h)anthracene
34.	Chrysene
16	Butyl benzyl phthalate Carbazole
9	Bis(2-ethylhexyl)phthalate
9.8	Bis(2-chloroisopropyl)ether
	Bis(2-critoroethox)/inertiarie Bis(2-chloroethorl)ether
500	Benzyl alcohol
750	Benzoic acid
3.4	Benzo(g,n,n)penyiene Benzo(k)fluoranthene
0.3	Benzo(b)fluoranthene
0	Benzo(a)pyrene
0.1	Benzo(a)anthracene
-	Azobenzene
Scree	

Scree	ening	Source				MW-36	~			
Lev	vels	201000	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Total Metals (mg/L):										
Arsenic 0.	.01	(2)	<0.020		0.015 J		< 0.020		< 0.020	1
Barium 2	2.0	(2)	0.57	!	0.69	1	9.0	1	0.16	1
Cadmium 0.0	005	(2)	< 0.0020	1	< 0.0020	:	< 0.0020	:	< 0.0020	1
Chromium 0.	.05	(3)	<0.0060	1	0.042	:	< 0.0060	:	< 0.0060	1
Lead 0.0	015	(2)	< 0.0050	-	< 0.0050	-	0.0093	1	< 0.0050	1
Selenium 0.	.05	(3)	< 0.050	1	< 0.050	1	< 0.050	1	< 0.050	1
Silver 0.	.05	(3)	< 0.0050	1	< 0.0050	1	< 0.0050	:	< 0.0050	1
Mercury 0.0	002	(3)	<0.00020	1	< 0.000039 J	:	< 0.00020	:	< 0.00020	1
Dissolved Metals (mg/L):										
Arsenic 0.	.01	(2)	< 0.020	1	< 0.020	1	< 0.020	1	< 0.020	1
Barium 1	1.0	(3)	0.52	1	0.43	:	0.55	:	0.16	1
Cadmium 0.0	005	(2)	< 0.0020	1	< 0.0020	1	< 0.0020	1	< 0.0020	1
Calcium			120	1	100	1	86	1	37	1
Chromium 0.	.05	(3)	< 0.0060	:	< 0.0060	:	< 0.0060	:	< 0.0060	1
Copper	1	(3)	< 0.0060	-	< 0.0060	-	0.033	1	< 0.0060	1
Iron	-	(3)	0.13	1	0.16	1	13	1	0.032	1
Lead 0.0	015	(2)	< 0.0050	1	< 0.0050	1	0.014	1	< 0.0050	1
Magnesium			20	-	16	-	16	1	9	1
Manganese 0	0.2	(3)	2.7	!	2.4	ł	e	1	0.93	1
Potassium			2.2	1	1.9	1	2.8	1	1.1	1
Selenium 0.	.05	(3)	<0.050	1	0.030 J	:	< 0.050	:	< 0.050	1
Silver 0.	.05	(3)	< 0.0050	-	< 0.0050	-	< 0.0050	1	< 0.0050	1
Sodium			210	-	190	-	180	1	130	1
Uranium 0.	.03	(3)	< 0.10	1	< 0.10	1	< 0.10	1	< 0.10	1
Zinc 1	10	(3)	<0.020	1	0.034	1	0.053	1	0.022	1
Total Petroleum Hydrocarbons (mg/L):										
Diesel Range Organics 0.0	3398	(9)	< 0.40	<0.40	< 0.20	<0.20	0.28	<0.20	< 0.20	<0.20
Gasoline Range Organics			0.18	0.058	0.047 J	<0.050	< 0.050	<0.050	< 0.050	<0.050
Motor Oil Range Organics 0.0	0398	(9)	< 2.5	<2.5	<2.5	<2.5	< 2.5	<2.5	< 2.5	<2.5

 Notes:

 (1) EPA - Regional Screening Levels (June 2017) - Tap Water

 (2) EPA - Regional Screening Levels (June 2017) - MCL

 (3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

 (4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)

 (5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds

 (6) NMED groundwater screening level for unknown oil

 = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time

 = Laboratory analyzed for combined Nitrate phase

= Analytical result exceeds the respective screening level.

= 6/27/13 modification on FWGWM Plan to remove MW-8 and replace with MW-52. = Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase

	A110-1	ci-fine	1	1	1	1		1	1	1	1	-	1	1	1	1	1	1	1	1	1	1		1	1	1	1		1	1	1	1			1	1		1	1	1		1	1	1	1		•	1	1	1		1	-	1		
	1-56 Aun-16	oi-fine	< 1.0	< 1.0	< 2.0	< 1.0	v 1	< 10	< 1.0	< 2.0	< 1.0	300	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	97	< 1.0	< 1.0	< 1.0	<b>6</b>	0.2 ×	< 1.0	< 10	26	< 1.0	10	150	180	< 1.0	< 1.0	v 30	< 10	< 1.0	<ul> <li>1.0</li> <li>2.0</li> <li>3.0</li> <li>4.10</li> <li>4.</li></ul>	< 1.0 < 1.0	< 3.0	< 1.0	< 1.0	<pre></pre>	< 1.0	8	< 1.0	13	< 3.0	52	9	19	7.8	<ul><li>1.0</li><li>1.0</li></ul>	< 1.0	1.4	<pre></pre>		< 10
	MW 41-17	1-6nv	1	1	1	1		:	1	1	1	1	1	1	1	1	1	1	1	:	1	1		1	1	1	1		1	1	1	1		1	:	1		1	1	1		1	1	1	1		1	1	1	1		1	:	!		1
	Aun-18	oi-fine	1		1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	1	1	1		1	1	1	1			1	1	1		1	1	1		
Matrix         Matrix<	A110-15	ci-fin-	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1		1	1	1		1	1	1	1		1	1	1	1			1	1	1	1	1	1	1	1	1	1	1		1	1	1	1		1	1			11
Matrix         Matrix<	55 \		;	1	:	1		:	1	1	:	-	:	:	1	:	1	1	-	1	1	:		:	1	1	1		:	1	;	1			:	:		1	1	1		1	1	1	;		1	1	1	1		1	1			; ;
Matrix		/ / / - fin	1		1	1			1	1	1		1	1	1	1	1		1	:	1	1		1		:	1			1	1	1			1	1	1	1	1	1		1	1	1	1			1	1	1		1	1			
Meta         Meta <th< td=""><td>14.18</td><td>- 1 oi - 6m</td><td>1</td><td>1</td><td>1</td><td>1</td><td>   </td><td></td><td>1</td><td>1</td><td>1</td><td>-</td><td>-</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td> </td><td>1</td><td>1</td><td>1</td><td>   </td><td>1</td><td></td><td>1</td><td>1</td><td>   </td><td></td><td>1</td><td>1</td><td>1</td><td>   </td><td>   </td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>   </td><td>1</td><td>1</td><td>1</td><td>1</td><td>   </td><td></td><td>1</td><td>1</td><td>1</td><td>   </td><td>1</td><td>1</td><td> </td><td></td><td>   </td></th<>	14.18	- 1 oi - 6m	1	1	1	1			1	1	1	-	-	1	1	1	1	1		1	1	1		1		1	1			1	1	1			1	1	1	1	1	1		1	1	1	1			1	1	1		1	1			
Metricipation         Metricip	15 D	r ci-bn	1	1	1	1			1		1	-	-	1		1	1	1	-	1	1	1		1	1	1	1			1	1	1			1	1		1	1	1		1	1	1	1		1	1	1	1		1	1			
Free manual state         Multiple         Multiple <td>4 1-15 0</td> <td></td> <td>1</td> <td></td> <td>1</td> <td>-</td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>-</td> <td>-</td> <td>1</td> <td>1</td> <td></td> <td>1</td> <td></td> <td>-</td> <td>:</td> <td>1</td> <td>1</td> <td></td> <td>1</td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td>1</td> <td> </td> <td>•</td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>   </td> <td>1</td> <td>1</td> <td>-</td> <td></td> <td>11</td>	4 1-15 0		1		1	-			1	1	1	-	-	1	1		1		-	:	1	1		1			1			1		•			-			1	1	1		1	1	1	1			1	1	1		1	1	-		11
Tennol         Mundational         Mundational <t< td=""><td>**MW-5</td><td>4   11-6r</td><td></td><td></td><td>:</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td></td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>-</td><td>1</td><td></td><td></td><td>-</td><td>•</td><td></td><td>1</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>   </td><td></td><td> </td><td>1</td><td></td><td>   </td><td></td><td>-</td><td> </td><td></td><td>   </td></t<>	**MW-5	4   11-6r			:	1													-	1	1	1				1	1			1	-	1			-	•		1	1	1			1	1	1				1				-			
Free         Ministry         Ministry         Ministry         Ministry         Ministry           Component         101         <	M-18 ∆	10-10 H	-								1	-		-			1	-		-	-	1		1			1			-	-	-							1	1			1	1	1			-	-				-	-		11
Terrenting         Minicipation         Minicipation         Minicipation         Minicipation         Minicipation         Minicipation           reconsidence         a <td< td=""><td>~-15 ∆I</td><td></td><td>1.0</td><td>1.0</td><td>2.0</td><td>1.0</td><td>0.0</td><td>1.0</td><td>1.0</td><td>2.0</td><td>1.0</td><td>1.0</td><td>2.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>4.0</td><td>10</td><td>1.0</td><td>10</td><td>4.0</td><td>1.0</td><td>10.1</td><td>10</td><td>1.0</td><td>1.0</td><td>1.0</td><td>30</td><td>10</td><td>1.0</td><td>1.0</td><td>1.0</td><td>3.0</td><td>1.0</td><td>1.0</td><td>0.1</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>3.0</td><td>2.0</td><td>3.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>&lt; ,</td><td>1.0</td></td<>	~-15 ∆I		1.0	1.0	2.0	1.0	0.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	4.0	10	1.0	10	4.0	1.0	10.1	10	1.0	1.0	1.0	30	10	1.0	1.0	1.0	3.0	1.0	1.0	0.1	1.0	1.0	1.0	1.0	3.0	2.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	< ,	1.0
Strending interview         Strending interview         Market interview         Market int	-16 ∆II		1.0 <	1.0 <	2.0 <	1.0 ×	v v	10	1.0 <	2.0 <	1.0	1.0 <	2.0 <	1.0	1.0	1.0	1.0	1.0 <	1.0 <	1.0 <	1.0	4.0	4 V	1.0	10 <	4.0 <	V 0.	v v	10	1.0 <	1.0 <	1.0	v v	10 ×	1.0 <	1.0 v	× ×	3.0 <	1.0 <	v 7		1.0	1.0 <	1.0	v 7	3.0 ×	2.0	3.0 <	1.0 <	1.0	1.0 ×	> 0.1	1.0 <	1.0 <	` ~	10
Transmertioner light contentioner informationer	MW-53		> 0.2	× 0.	×	v 0.0			× 0.	× 0.2	× 0.	> 0.1	> 0.0	× 0.	×	v 0.	×	× 0.	> 0.	×	v 0.	v 0:t			10	× 0.1	v 0. 0	0. C		× 0.1	× 0.	v 0.0		10	× 0.	v 0.	v v	s.0 ×	× 0.	v v	v v	0.	×	× 0.	v .		×	s.0 <	v 0.	0.0	/ v	v 0.1	× 0.1	v 0.	\ <	v v
Strending Long         Strending Long         Strending Long         Amptify Long         Amptify Long         Amptify Long         Amptify Long         Amptify Long         Amptffy Long         Amp ffy Long         Amp ffy	-18 0110	3n4   01-	~	v ·	~	v	v ì	/ `v	v	~	v ·	v	~	v	v v	v v	v ·	v	v	v	v ·	· ·	v v	/ `v	v	7 ×	v 1	v 1	′ <mark>?</mark>	. 0.	v ·	v	v î	/ v	v	v v	v v	v	v	v ,	v `v	v	.0	v ·				v	v		v v	v	. 0.	v -	`	v v
Strenning Interviewer         Strenning Strenning         Strenning Strenning         Strenning Strenning         Strenning Strenning         Strenning Strenning         Strenning Strenning         Strenning          Strenning	15 010		· 0.	- 0.	- 0.	0. 0		2 0	0.	- -	- -	- 0.	- 0.	- -	· •	0.	· •	- 0.	- 0.	- 0.	; 0,	0.0		, 0,	20		0.0		, 0	.0	-	- 0. (		2 0	-			0.	-	0.0			.0	; 0.	0.0		   	0.		0, 0		0.	. 1 ~ 1	- 0.	<	0, c
Screening bunce         Screening Aug.1         Aug.1         Au	16   Alio-	-fine of	0 < 1	0 < 1	0 <2	0			0	0 < 2	0	0 < 1	0 <2	0	0	0	0 1	0 < 1	0 < 1	0 < 1	0	0 4 4 0				0 < 4				0 < 1	0	0			0	0		0	0			0	0 < 1	0			0 < 2	0 < 3	0			0 ~ 1	0 <1	0 1	۰ د	0 0
Steening Lower         Source         Angrist Augrist Augris	MW-51	-fine 1	0 < 1.	<pre></pre>	0 < 2.		· ·		<ul> <li>1.</li> </ul>	0 < 2.	) ~ 1.	0 < 1.	) < 2.	) <	) - 1 -	) ~ 1.	<pre></pre>	0 < 1.	0 < 1.	0 ~ 1.	- - -	0 .4 .		· · ·		0 < 4.				0 <1.	0 < 1.	-, -, -, -, -, -, -, -, -, -, -, -, -, -	- ~ ~		) < 1.		v v 1	< 3.	<pre></pre>	- - - -		<ul> <li>1</li> <li>1</li> </ul>	0 < 1.	- - -		· · ·	0	0 < 3.	<pre></pre>		· · ·	· 1 ·	0 × 1.	.1. > 0	,	
Screening Interpretation (chlorosthame         Sure 51,4         Augrit	ο Διια-	- And o	< 1.(	< 1.(	< 2.(	× 1.0		× 1	< 1.(	< 2.(	< 1.(	< 1.(	< 2.(	< 1.(	< 1.(	< 1.(	< 1.(	< 1.(	< 1.(	< 1.(	<ul><li>1.0</li></ul>	< 4.0	V 10	< 1.(	< 10	< 4.(		).   \ 		< 1.(	< 1.(	× 1.0		<ul> <li>10</li> <li>10</li> </ul>	< 1.(	v 1.0	<pre>&lt; 2.0</pre>	< 3.(	< 1.(	~ 1.	× ×	< 1.(	< 1.(	<ul><li>1.0</li></ul>	< 1.(	< 3.0	< 2.(	< 3.(	< 1.(	v 1.0	× 1.0	< 1.(	< 1.(	< 1.0	1	<pre>&gt; 1.0</pre>
Screening biologyphane         Sume biologyphane         Amy - 10 biologyphane         Amy - 10 biologyphane           Compountsi (will)         Compountsi (will)         Compountsi (will)         Compountsi (will)         Compountsi (will)           Compountsi (will)         Compountsi (will)         Compountsi (will)         Compountsi (will)         Compountsi (will)           Compountsi (will)         Compountsi (will)         Compountsi (will)         Compountsi (will)         Compountsi (will)         Compoundsi (will)           Compountsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)           Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)           Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)           Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)           Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)         Compoundsi (will)           Compoundsi (will)         Compoundsi (will)         Compoundsi (will) </td <td>4 Aun-1</td> <td>-fine +</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td>1</td> <td>I</td> <td>1</td> <td>1</td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td> </td> <td>&lt; 1.0</td> <td>1</td> <td>1</td> <td></td> <td> </td> <td>1</td> <td>1</td> <td>   </td> <td>1</td> <td>1</td> <td>1</td> <td>   </td> <td>1</td> <td>&lt; 1.0</td> <td>1</td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td>1</td> <td>1</td> <td>&lt; 1.0</td> <td>1</td> <td>_</td> <td>11</td>	4 Aun-1	-fine +	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	I	1	1		1	1	1	1			< 1.0	1	1			1	1		1	1	1		1	< 1.0	1			1	1	1		1	1	< 1.0	1	_	11
Screening Level         Source Aug-11         Aug-11         Aug-11         Aug-11           Level         Stration         Aug-11         Aug-11         Aug-11           Components         S14              Components         S14              Components         S14               Components         S14                Components         S14	110-11	-fine o	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1			1	1	1			1			1	1	1		1	1	1	1		1					1	1	1		
Screening Levels         Source Aug-17         Aug-17         Aug-17           Compounds         5/1         (1)         Aug-17         Aug-17           Compounds         5/1         (1)         (1)         (1)           Compounds         5/1         (1)         (1)         (1)         (1)           Compounds         5/1         (1)         (1)         (1)         (1)           Compounds         5/2         (2)         (1)         (1)         (1)           Compounds         3/2         (1)         (1)         (1)         (1)           Compounds         5/2         (2)         (1)         (1)           Compounds         5/2         (2)         (1)         (1)           Compounds         5/2         (2)         (1)         (1)	W-50	-fine	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1		1	1	1	1			1	•		1	1	1		1	1	1	1		1		1			1	1	1		
Screening Levels         Source Aug.17         Aug.17           Levels         S.74         (4)         (	M 01-16	SI-Rny	< 1.0	< 1.0	< 2.0	< 1.0	v v	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	<pre>&lt; 2.0</pre>	< 1.0	< 10	< 4.0	<ul> <li>1.0</li> <li>1.0</li> </ul>	0.1 v	< 10	< 1.0	< 1.0	< 1.0	v 30	< 10	< 1.0	< 1.0	<ul><li>&lt; 2.0</li><li>&lt; 1.0</li></ul>	< 3.0	< 1.0	< 1.0	<pre></pre>	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0	< 2.0	< 3.0	< 1.0	<ul> <li>1.0</li> <li>1.0</li></ul>	<pre>&lt; 1.0</pre>	< 1.0	< 1.0	<ul><li>1.0</li></ul>	,	<ul> <li>1.0</li> <li>1.0</li> <li>1.0</li> </ul>
Screening Levels         Screening Levels <thscreening< th="">         Screening Levels</thscreening<>	A110-17	-fine	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1		1	1	1	1			1	•		1	1	1		1	1	1	!		1	1	1			1	-	1	_	
Screenin           Levels           Levels           Levels           Compounds         174           Levels         5.74           Levels         5.74           Echloroethane         5.74           Diotopropane         5.74           Intoroethane         5.74           Ichloroethane         5.74           Ichloroethane         5.74           Ichloroethane         5.74           Ichloroptopane         107           Ichloroptopane         0.01           Intorptopane         0.02           Intorptopane         13           Intorptopane         250           Intorptopane         13	g Source		(4)	(3)	(3)	(2)	(c) (c)	2		(4)	(2)	(1)	(2)	(2)	(2)	(2)	(2)	(1)		(1)	(2)	(2)	(7)	Ê (		(1)	(1)		(4)	(2)	(1)	(4)	(c)	(4)	(2)	(2)	(4)	(4)	(2)	(4)	(1)	(4)	(2)	(4)	(4)	(2)	(4)			(6)	(7)	(2)	(3)	(7)		(2)
<ul> <li>Compounds</li> <li>Compounds</li> <li>choloroethane</li> <li>ichloroethane</li> <li>ichloroethane</li> <li>ichloroethane</li> <li>ichloroethane</li> <li>ichloroethane</li> <li>ichloropropene</li> <li>hlorobenzene</li> <li>ethvale</li> <li>ED</li> <li>hlorobenzene</li> <li>ethvale</li> <li>ED</li> <li>hlorobenzene</li> <li>ethvale</li> <li>ED</li> <li>hlorobenzene</li> <li>ethvale</li> <li>ED</li> <li>hlorobenzene</li> <li>ethvale</li> <li>hlorobenzene</li> <li>onobenzene</li> <li>onobenzene</li> <li>onobenzene</li> <li>hlorobenzene</li> <li>onobenzene</li> <li>onoben</li></ul>	Screenin Levels	(ng/L)	5.74	60	10	5	C7	, ,		0.01	70	15	0.2	0.05	600	5	5	12		370	75	11	5560	240		36	250	•	14100	5	62	1.34	754	810	5	100	100	20.3	20	4.7	8.3	197	700	1.39	447	21	1.65	•	•	- 100	3 .	5	750	100	1 71	4.71
	-	: Compounds (	achloroethane	ichloroethane	achloroethane	richloroethane	ichloroethene	chloropropene	hlorobenzene	chloropropane	hlorobenzene	nethylbenzene	chloropropane	ethane (EDB)	hlorobenzene	ethane (EDC)	chloropropane	hthylbenzene	thlorobenzene	chloropropane	hlorobenzene	ylnaphthalene	2-Butanone	Chlorotoluene	2-Hexanone	ylnaphthalene	Chlorotoluene	propyrouene	Acetone	Benzene	romobenzene	hloromethane	DEVITION	irbon disulfide	Tetrachloride	hlorobenzene	Chloroform	hloromethane	cis-1,2-DCE	chloropropene	romomethane	luoromethane	Ethylbenzene	lorobutadiene	orbylbenzene	Iene Chloride	Naphthalene	Butylbenzene	ropylbenzene	Butylbenzene	Butvlbenzene	ethene (PCE)	Toluene	rans-1, 2-UCE	00000000017	:hloropropene

	ua-15		-	1	1	1	•		1	•	1	1			1				1	1	1	1	1	1			1	1	1	1	1	1	1			1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	•	1		
	10-16 A		< 10	< 10	< 10	< 10	< 10	< 10 <	< 20	< 10	< 20	<pre>v 10</pre>	v 10	01.0	01.0		0	10	< 10	< 10	< 10	< 20	< 10	< 10		10	10	< 10	< 10	< 10	< 10	< 10	<ul> <li>10</li> <li>10</li> </ul>		<ul> <li>10</li> <li>10</li> </ul>	< 10	< 20	< 10	< 10	<ul> <li>10</li> <li>10</li> </ul>		10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	26	< 10	< 10	< 10	< 10	2	110
Matrix         Matrix<	MW-56		ľ	ľ	ľ	•	•		•	•	•	•	•	•	•				•	ľ	•	•	•	•	•				•	•	•	•	•	•		•	•	•	•	•	•					ľ		•			•	•	•	1		
Model         Model <th< td=""><td>-18 Au</td><th></th><td> -  -</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td> .  .</td><td>  ·</td><td> '  -</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td>_</td><td>_</td><td></td><td></td></th<>	-18 Au		-  -																																									.  .	·	'  -		-					_	_		
Matrix         Matrix<	15 Auo		1	1	1	1	1		1	1	1	1			1					1		1	1	1	1		1				1	1	1				1	1	1	1							1	-	1	1	1	1	!	1		
Number lists         Matrix         M	e Aud-		1	1	1	1	1		1	1	1	1	1	1	1					1		1	1	1	1			1			1	1	1				1	1	1	1									1		1			1		
Transitional static s	MW-55		1	1	1	1	1		1	1	1	1	1	1	1			1		1	1	1	1	1	1		1	1	1	1	1	1	1				1	1	1	1			1				1	1	1		1	1		1		
Multical	**  Aua-17		1	1	1	1	1		1	1	1	1	1	1	1			1	1	1	1	1	1	1	1		1	1	1	1	1	1	1			1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1		
Metal         Metal </td <td>Aug-18</td> <th></th> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td> </td> <td>1</td> <td>I</td> <td>1</td> <td>1</td> <td></td> <td>   </td>	Aug-18		1	1	1	1	1		1	1	1	1	1	1	1			1	1	1	1	1	1	1	1		1	1	1	1	1	1	1			1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	I	1	1		
Tetrange	Aua-15		1	1	1	1	•	1	1	1	1	1	1	1	1				1	1	I	1	1	1	1		1	1		1	1	1	1			1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	I	1	1	1	1
Tetranti literationalizate alla ala ala ala ala ala ala ala ala a	-54 Aua-16	2	1	1	1	1	1		1	1	1	1	1	1	1			1	1	1	1	I	1	1	1		1	1	1	1	I	1	1			1	1	I	1	1	1	1	1	1	1	1	1	1	1	1	1	I	1	1		1
Fund         Fund <t< td=""><td>**MW Aug-17</td><th>2</th><td>1</td><td>1</td><td>1</td><td>:</td><td>:</td><td>   </td><td>1</td><td>1</td><td>:</td><td>1</td><td>!</td><td>1</td><td>1</td><td></td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>!</td><td>1</td><td></td><td></td><td>:</td><td></td><td>:</td><td>1</td><td>!</td><td>:</td><td></td><td></td><td></td><td>1</td><td>:</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td></td><td>1</td><td>1</td><td>1</td><td>:</td><td>1</td><td>1</td><td>1</td><td>1</td><td>:</td><td>:</td><td></td><td>   </td></t<>	**MW Aug-17	2	1	1	1	:	:		1	1	:	1	!	1	1				1	1	1	1	!	1			:		:	1	!	:				1	:	1	1	1			1		1	1	1	:	1	1	1	1	:	:		
Tennal         Stanta         Antional         Antional <th< td=""><td>ua-18</td><th>2</th><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>   </td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>   </td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td></td><td>   </td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td></td><td>   </td></th<>	ua-18	2	1	1	1	1	1		1	1	1	1	1	1	1			1	1	1	1	1	1	1			1	1	1	1	1	1	1			1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1		
Terrential         Amonto         Marcel         Mar	15 A		< 10	< 10	< 10	10	10	10	< 20	< 10	20	10	10	10	01.7		10	10	10	< 10	< 10	< 20	10	10		10	10	10	10	10	< 10	د 10	10		10	10	< 20	< 10	10	10	0.5	10	10	10	< 10	< 10	< 10	< 10	< 10	< 10	× 10	< 10	< 10 	10		10
Transing strange         Strange         Mu430         Mu430         Mu431         Mu431         Mu431           Text         Mu431         Mu431         Mu431         Mu431         Mu431         Mu431         Mu431           Text         Mu431         Mu431         Mu431         Mu431         Mu431         Mu431         Mu431           Text         Mu431         M	a-16 Ai		-	•	•	•			•	•	•	•		•	•				•	•	•	•	•	•	•					•	•	•	•			•	•	•	•	•	•					•			•	•	•	•		•	_	•
Terrential transiti         Terrential transition         Terrential	MW-53		-																		-																																-	-		
Strenting Lowest         Same and Lowest         Map (1) (1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	-18 Auc			'	'	'	·		•	•	•	'	'	'	'					'	' 	'	'	•	'				·		•	'	'				•	'	•	'				'  -		'  -					•			'		
Tenning Serenting Serenting Servering Serve	15 Aud		1	1	1	1	1		1	1	1	'	'	1	!					1	1	1	'	1	1		1	1	1	1	1	'	•				1	1	1	1			1	-		 	1	1	1	1	1	1	! 	1		
Screening Screening Screening Difficultorbarcane 1.2.Difficultorbarc	6 Aud-		1		1	1	1		1	1	1				1					1	-	1	1	1	1						1	1	1				1	1	1	1								-					-	1		
	W-51		< 10	< 10	< 10	× 10	× 10	× 10	< 20	< 10	< 20	0 V	01 v	010				10	<ul> <li>10</li> <li>10</li> </ul>	< 10	< 10	< 20	<ul> <li>10</li> </ul>	× 10			v 10	<ul> <li>10</li> <li>10</li> </ul>	<ul> <li>10</li> </ul>	< 10	< 10	< 10	× 10		2 V	< 10	< 20	< 10	<ul> <li>10</li> </ul>	× 10		10	× 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	× 10	< 10	( )	v 10
	M Aug-17		!	1	!	!	!		!	1	1	!	!	1	!			1	1	1	1	!	!	1	!		!	1	!	1	!	!	1			1	1	!	1	1		1	!	!	!	1	1	!	1	!	1	1	!	!		
Leveling Leveling Survey         Augration Augration         Augration         Augration           12.4 Trinolonobenzene 1.2.4 Dimetryfinaphthalene 2.4.5 Trinolonobenzene 1.2.4 Dimetryfinaphthalene 2.4.5 Trinolonobenzene 1.2.4 Dimetryfinaphthalene 2.4.5 Trinolonophenol 1.170         2.1         2.1         2.1         2.1           2.4.5 Trinolonobenzene 1.2.4.5 Trinolonophenol 2.4.5 Trinolonophenol 2.4.5 Trinolonophenol 2.4.5 Trinolonophenol 2.4.5 Trinolonophenol 2.4.5 Trinolonophenol 3.3.5         4.1         2.1         2.1           2.4.5 Trinolonophenol 2.4.5 Trinolonophenol 2.4.5 Trinolonophenol 3.5.4         4.1         2.1         2.1         2.1           2.4.5 Trinolonophenol 3.5.4         4.1         4.1         4.1         2.1         2.1           2.4.5 Trinolonophenol 3.5.4         4.1         4.1         4.1         4.1         4.1           3.5.5 Trinolonophenol 3.5 Trinolonophenol 3.5 Trinolophenol 3.5 Trin	Aud-18	0	< 10	< 10	< 10	<ul><li>10</li></ul>	<ul> <li>10</li> <li>4</li> </ul>	× 10 × 10	< 20	< 10	< 20	v 10	0 v	01 0	01.2		2 0	10	< 10	< 10	< 10	< 20	< 10	× 10			10	< 10	< 10	< 10	< 10	< 10	<ul><li>10</li></ul>		2 V	< 10	< 20	< 10	< 10	<ul> <li>10</li> <li>4</li> </ul>		2 10 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<ul> <li>10</li> </ul>	< 10	, 10	v 10
Levels LevelsScreening LevelsSource AugratsMW-501.24T.1.21AugratsAugratsAugrats1.2.211.2.21AugratsAugratsAugrats1.2.211.4.211.2.212.4.511.4.211.2.212.4.511.4.211.4.211.4.212.4.512.4.511.4.211.4.211.4.212.4.512.4.511.4.211.4.211.4.212.4.512.4.511.4.11.4.211.4.12.4.512.4.511.4.11.4.11.4.12.4.512.4.511.4.11.4.11.4.12.4.512.4.511.4.11.4.11.4.12.4.512.4.511.4.11.4.11.4.12.4.512.4.511.4.11.4.11.4.12.4.512.4.511.4.11.4.12.4.512.4.511.4.11.4.11.4.12.4.512.4.511.4.11.4.11.4.12.4.512.4.511.4.11.4.11.4.12.4.512.4.511.4.11.4.11.4.13.3.512.4.511.4.11.4.11.4.13.4.4.442.441.4.1 </td <td>Aug-14</td> <th>2</th> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>   </td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>  </td> <td></td> <td> </td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>  </td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td> </td> <td>1</td> <td>I</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td>	Aug-14	2	1	1	1	1	1		1	1	1	1	1	1	1				1	1	1	1	1	1	1		1	1	1	1	1	1	1			1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	I	1	1	1	1
Screening Bornel         Screening Bound         Screening Bound         Muture Burnel         Muture Burnel           1.2.4. Trichlorobenzene         00         2)          40           1.2.4. Trichlorobenzene         00         2)          40           1.2.4. Trichlorobenzene         00         2)          40           1.2.4. Trichlorobenzene         1170         5)          40           1.2.4. Trichlorobenzene         1170         5)          40           1.2.4. Trichlorobenzene         1170         5)          40           2.4. Dinitrophenol         1170         5)          40           2.4. Dinitrophenol         1137         4(4)          40           2.4. Dinitrophenol         313         4(4)          40           2.4. Dinitrophenol         31         4(4)          40           2.4. Dinitrophenol<	50 Aua-15		1	1	1	1	1		1	1	1	1	1	1	1			1	1	1	1	1	1	1	1		1	1	1	1	1	I	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1
Screening Levels         Source Aug-17         Aug-17         Aug-17           1.2.1-Tirchlorobenizene         70         (2)            1.2.2-Dichlorobenizene         70         (2)            1.2.4-Tirchlorobenizene         600         (2)            1.2.2-Dichlorobenizene         70         (2)            1.3.2.Dichlorobenizene         75         (4)            2.4.5-Trichlorobenizene         0.485         (4)            2.4.5-Trichlorobenizene         0.485         (4)            2.4.5-Trichlorobenizene         17.3         (4)            2.4.5-Trichlorobenizene         17.3         (4)            2.4.5-Trichlorobenizene         17.3         (4)            2.4.5-Trichlorobenizene         73.3         (4)            2.4.1         2.4.1              2.4.1         2.4.1              2.4.1         2.4.1              2.4.1         2.4.1               2.4	MW- Aug-16		< 10	< 10	< 10	< 10	<ul> <li>10</li> <li>10</li> </ul>	× 10 × 10	< 20	< 10	< 20	v 10	v 10	01 0	01.0	v v	0	v 10 v 10	< 10	< 10	< 10	< 20	< 10	× 10		v v	v 10 v 10	< 10	< 10 <	< 10	< 10	< 10	<ul> <li>10</li> <li>10</li> </ul>		v 10 10	< 10	< 20	< 10	< 10	<ul> <li>10</li> <li>10</li> </ul>		v 10 v 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		v 10
Screening LevelsScreening LevelsScreening SourceSource $Valitile Organic Compounds (ugl/1):1,2,4-Trichlorobenzene70(2)11,2,21Cichlorobenzene600(2)111,2.Dichlorobenzene70(2)111,2.Dichlorobenzene75(1)(2)11,2.Dichlorobenzene75(1)(2)11,2.Dichlorobenzene75(1)(2)(2)1,4.Dichlorobenzene75(4)(2)(4)2,4.Dimethylphenol38.7(4)(4)2,4.Dimitrophenol38.7(4)(4)2,4.Dimitrophenol38.7(4)(4)2,4.Dimitrophenol38.7(4)(4)2,4.Dimitrophenol33.7(4)(4)2,4.Dimitrophenol33.7(4)(4)2,4.Dimitrophenol33.3(1)(4)2,4.Dimitrophenol33(1)(5)2,4.Dimitrophenol33(1)(5)2,4.Dimitrophenol1.25(4)(4)2,4.Dimitrophenol33(1)(5)2,4.Dintrophenol1.25(4)(4)2,4.Dimitrophenol1.25(4)(4)2,4.Dimitrophenol33(1)(5)2,4.Dimitrophenol1.25(4)(4)2,4.Dimitrophenol2.4(1)(5)2,4.Dimotophenol1.25(4)(4)2,4.Dimotophenol1.25(4)(4)2,4.Dimotophenol$	ua-17		1	1	1	1	1		1	:	1	1	1	:	1				1	1	1	1	1	1							:	1	1			1	1	1	1	1			1	-		1	1	1	1	1	1	1	:	-		
Screening Levels         Screening Levels           Volatile Organic Componenzene 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5,5-Dinitrotoluene 2,4,5,5-Dinitrotoluene 2,4,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,	ource		(2)	(2)		(2)	(2)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	Ē	) =		(4)	(1)		(4)		í	(c)	(5)	2	(4)		(2)	(4)	(5)	(4)	(7)	f)	(4)	(1)	(1)	(1)	(4)	(4)	(2)	6	(4)	(4)		(4)		(4)		(4)	(4)	(4)	(4)		(4)
Activity of the second	eening S svels	s (ug/L):	20	600	,	75	11	11.9	45.3	354	38.7	2.3/	.485	/ 33	91	020 030	190	2 -	1.25	930		1.52		1.	3.1	- 85	g .	535		130	720	1.2	0.12	343		3.43	5000	000	59	.137	٩.01 ه	160	8 .	34.3	0343		4800		885		802	288	0976	.387		50 2 28
Addition         Addition           1.2.1         1.2.1         1.2.1         1.2.1         1.2.1         1.2.1         1.2.1         1.2.1         1.2.1         1.2.1         1.2.1         1.2.1         1.3.1         1.3.1         1.3.1         1.3.1         1.3.1         1.4.1         <	Scr Le	punoduc	zene	zene (	zene	zene	alene	enol	enol 4	ienol	lonal	nene	nene	liene	Ionol		iline .		dine 1	enol	illine	lenol	ether .	lenol		viline	enol	Jene 4	1ene	viline	cene 1	zene	cene (	Tene 0	lene	Tene S	acid 75	2 loho	hane	ether 0	etner ;	alate	zole	sene	cene 0.	uran	alate 1	alate	alate	alate	hene	rene	zene 0.	liene 1	((()))	liene hane
Benzol           0.0144116           1,2,2176           1,2,2176           1,2,2176           1,2,2176           1,2,2176           1,2,2176           1,2,2176           1,2,2176           1,2,457           2,4,57		rganic Co	chlorobenz	chlorobenz	chlorobenz	chlorobenz	iylnaphtha	richloroph	Dichloroph	<b>Nimethylph</b>	-Dinitroph			Chloren		-Mathvinh	2-Nitroan	2-Nitronh	nlorobenzi	-Methylph	3-Nitroan	-methylph	yl phenyl ∈	-methylph	H-Chioroan	4-Nitroan	4-Nitroph	Acenaphth	cenaphthy	An	Anthrac	Azobenz	(a)anthrac	erizu(a)py	a.h.i)pervi	k)fluoranth	Benzoic	Benzyl alc	hoxy)meth	loroethyl)e	sopropyi)e	in zvl phtha	Carba.	Chrys	h)anthrac	Dibenzoft	sthyl phthe	sthyl phthe	butyl phthe	octyl phths	Fluoranth	Fluo	chloroben	lorobutad		clopentadi
		<b>/olatile O</b>	1.2.4-Tric	1,2-Dic	1,3-Dic	1,4-Dic	1-Meth	2.4.6-Tr	2,4-D	2,4-D	2,4	2,4-	2,6-2	Z-CUIOI	2 MACH		4		3,3'-Dich	3+4-		3-Dinitro-2	omopheny	-Chloro-3	4	Iloropheny		4	AC				Benzo		Benzo	Benzo(k			2-chloroet	Bis(2-chl	s(2-chiorols	Butvl hei	and in a		Dibenz(a,		Die	Dime	Di-n-b	Di-n-C			Hexac	Hexach	NOOLCI GOOL	achlorocyc

 Notes:

 (1) EPA - Regional Screening Levels (June 2017) -Tap Water

 (2) EPA - Regional Screening Levels (June 2017) - MCL

 (3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/ TDS Concentration or less

 (4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)

 (5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds

 (6) NMED groundwater screening level for unknown oil

 (7) EPA screening level available

 (8) NMED word of the set of more on Site Investigations and Remediation (March 2017)

 (6) NMED groundwater screening level for unknown oil

 (7) Amediation of the set of the

TABLE 6 RCRA Wells Analytical Summary 018 Groundwater Remediation and Monitoring
--

| < 1.0      | 0.                           | -  |   | 1  |  | - 1   | - I   |   |   |   | •   •   |   | •   | 1.  | •   | •          | •                                    | • [ ]  |  | 1.1   |   
   
   
  |   | '   <b>"</b>   | 1.1   |   
   | •   | VV  | '   V   | V   
  | v۱v  | '   V   
   | V   | v   v   | v   | vļv  | v   v  | V  | V  | v v   
  | v   |                | v   | v v   | V   | v          | v١  | /   v          | / V   | v        | v   v
   | V      |
|------------|------------------------------|--|---|--|--|---|---|---|---|---|---|---|---|---|---|------------|--------------------------------------|--|--|---
--
--
--|---
--|---|---|---|---|---
--
--	--	---	---	---
--	---	----------------	---	---
---	----------------	---	----------	--
	v	< 2.0	< 1.0	< 1.0
   
   
  | < 10  | × 1.0  | < 1.0   | < 10  
   | < 10  | 0.1 v   | < 1.0   | < 1.0   
  | < 3.0                                      | < 1.0   
   | < 1.0   | < 2.0<br>< 1.0  | < 3.0   | <pre></pre>  | <ul><li>1.0</li><li>1.0</li></ul>  | < 1.0  | < 1.0  | <ul><li>1.0</li><li>1.0</li></ul>   
  | < 1.0   | 1.3            | < 3.0   | < 3.0   | < 1.0   | < 1.0      | <ul><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul> <li></li> | ×1.v           | <ul><li>&lt; 1.0</li></ul>                  | < 1.0    | <
1.0<br>< 1.0   | < 1.0  |
| < 1.0      | < 1.0                        | < 2.0  | < 1.0   | < 1.0  | < 1.0  | < 1.0   | < 1.0   | < 2.0   | < 1.0   | 0.13 J  | <pre> &lt; 20</pre>   | 0.10  | < 1.0   | < 1.0   | < 1.0   | < 1.0      | < 1.0                                | <ul><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul>  | < 2.0  | < 10  | < 1.0   
   
   
  | < 10  | 10   | < 1.0   | < 10  
   | 2.7 J   | 0.10  | < 1.0   | < 1.0   
  | < 3.0                                      | < 1.0   
   | < 1.0   | < 2.0   | < 3.0   | <ul> <li>1.0</li> <li>1.0</li> </ul>   | <ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>  | < 1.0  | < 1.0  | <ul><li>1.0</li><li>1.0</li></ul>   
  | < 1.0   | J.97 J         | < 3.0   | < 2.0   | < 1.0   | < 1.0      | <ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>   | v.1.0          | < 1.0                                       | < 1.0    | < 1.0
   | < 1.0  |
| < 1.0      | < 1.0                        | < 2.0  | < 1.0   | < 1.0  | < 1.0  | < 1.0   | < 1.0   | < 2.0   | < 1.0   | 0.1.0   | 0.2 2   |   | 41 J  | < 1.0   | < 1.0   | < 1.0      | <ul><li>1.0</li><li>1.0</li></ul>    | 0.1.0  | × 2.0  | < 10  | < 1.0   
   
   
  | < 10  |  | < 1.0   | < 10  
   | 12  | 0.10  | < 1.0   | < 1.0   
  | < 3.0                                      | < 1.0   
   | < 1.0   | × 2.0   | < 3.0   | . 1.0  |  | < 1.0  | < 1.0  | 0.1 0   
  | < 1.0   | 2.9 0          | 3.0   | <ul> <li>3.0</li> <li>2.0</li> <li>2.0</li> </ul> | < 1.0   | < 1.0      | 10<br>10<br>10  |                | × 1.0                                       | < 1.0    | × 1.0
   | × 1.0  |
| < 1.0      | 1.0                          | < 2.0  | × 1.0   | < 1.0  | < 1.0  | < 1.0   | < 1.0   | < 2.0   | <ul> <li>1.0</li> <li>1.0</li> </ul>  | . 1.0   | 010   | 010   | 1.0   | × 1.0   | < 1.0   | < 1.0      | × 1.0                                | 0.1  | 2.0  | < 10  | < 1.0   
   
   
  | < 10  |  | < 1.0   | < 10  
   | < 10  | 0.10  | < 1.0   | < 1.0   
  | < 10                                       | < 1.0   
   | < 1.0<br>2 0.1  | × 2.0   | < 3.0   | 1.0  | 0.1  | < 1.0  | <ul> <li>1.0</li> <li>1.0</li> </ul>   | 0.1   
  | < 1.0   | < 1.0          | 3.0   | 3.0   | < 1.0   | < 1.0      | 1.0   | 2012           | × 1.0                                       | × 1.0    | 1.0  
   | 10     |
| < 1.0      | < 1.0                        | < 2.0  | < 1.0   | < 1.0  | < 1.0  | < 1.0   | < 1.0   | < 2.0   | <ul> <li>1.0</li> <li>.</li> </ul>  | v 1.0   | 0.2 2.0   | 10  | 1.0   | <ul><li>1.0</li></ul>                                 | < 1.0   | < 1.0      | <ul> <li>1.0</li> <li>1.0</li> </ul> | 0.1.0  | × 2.0  | < 10  | < 1.0   
   
   
  | < 10  | 010  | < 1.0   | < 10  
   | < 10  | 0.10  | < 1.0   | < 1.0   
  | < 3.0                                      | < 1.0   
   | < 1.0   | × 2.0   | < 3.0   | 1.0  |  | < 1.0  | <ul> <li>1.0</li> <li>1.0</li> <li>1.0</li> </ul>  | 0.1 2   
  | < 1.0   | < 1.0          | 3.0   | <ul> <li>3.0</li> <li>3.0</li> </ul>              | . 1.0   | < 1.0      | 10  | . 10           | × 1.0                                       | < 1.0    |
<pre>&lt; 1.0</pre>  | , 10   |
| 1.0        | 1.0                          | 2.0  | 1.0   | 1.0  | 1.0  | 1.0   | 1.0   | 2.0   | 1.0   | 1.0   | 10  | 10  | 1.0   | 1.0   | 1.0   | 1.0        | 1.0                                  | 0.1  | 2.0  | 10  | 1.0   
   
   
  | 10  |  | 1.0   | ¢ 10  
   | 10  | 0.1   | 1.0   | 1.0   
  | 3.0  | 1.0   
   | 1.0   | 1.0   | 3.0   | 1.0  | 1.0  | 1.0  | 1.0  | 0.1   
  | 1.0   | 1.0            | 3.0   | 3.0   | 1.0   | 1.0        | 1.0   | 10             | 1.0   | 1.0      | 1.0  
   | > <    |
| 1.0 <      | 1.0                          | 2.0  | 1.0   | 1.0  | 1.0 <  | 1.0   | 1.0   | 2.0   | 1.0   |   | 10  |   | 0.1   | 1.0   | 1.0   | 1.0        | 1.0                                  | 0.0  | 2.0  | 10  | 1.0   
   
   
  | 10  |  | 1.0   | 10  
   | 10  | 0.1   | 1.0   | 1.0   
  | 3.0  | 1.0   
   | 1.0   | 1.0   | 3.0   | 1.0  | 1.0  | 1.0  | 1.0  | 0.1<br>0.1  
  | 1.0   | 1.0 <          | 3.0   | 3.0   | 1.0   | 1.0        | 1.0   | , v            | 1.0   | 1.0      | 10   
   | 2      |
| v<br>v     | v                            | v<br>·   | v   | v  | v  | v   | v   | ``  | v   | - <b>-</b>  |   |   | v v   | v v   | v   | v          | v                                    | v   '  |  | v   | v   
   
   
  | v 1   |  | v v   | v   
   | v 1   | v v   | v v   | v   
  | v v  | ' 'v  
   | v   | v v   | v   | v ;  | v v  | v  | v  | v v   
  | v   | v              | v ;   |   | v   | v          |   | / v            | / v   | v        |      
   | /      |
| '<br>  .   |                              |  |   |  |  | •   | •   |   |   |   |   |   |   |   |   | •          | •                                    |  |  |   |   
   
   
  |   |  |   | •   
   |   |   |   |   
  |  |   
   |   |   | 1   |  |  |  |  |   
  |   |                |   |   |   |            |   |                |   |          |      
   |        |
|            |                              |  |   |  | 1  | 1   | 1   | 1   | 1   | 1   |   |   |   |   | 1   | 1          | 1                                    | 1  |  | 1   | 1   
   
   
  | 1   |  |   | 1   
   | 1   |   |   | 1   
  |  |   
   | 1   |   | 1   | 1  |  |  | 1  |   
  | 1   | 1              | 1   |   |   |            |   |                |   |          |      
   |        |
|            | 1                            |  |   |  | -  | 1   | 1   | 1   | 1   | •   |   |   |   |   |   | 1          | 1                                    |  |  | 1   | 1   
   
   
  | •   |  |   | 1   
   | 1   |   |   | 1   
  |  |   
   | 1   |   | 1   | 1  |  | 1  | 1  |   
  | 1   | 1              | 1   |   |   |            |   | .              | 1   |          |      
   | +      |
|            | 1                            | 1  |   | 1  | 1  | 1   | 1   | 1   | 1   | 1   |   |   |   | 1   | 1   | 1          | 1                                    | 1  |  | 1   | 1   
   
   
  | 1   |  | 1   | 1   
   | 1   |   |   | 1   
  |  |   
   | 1   |   | 1   | 1  |  |  | 1  |   
  | 1   | 1              | 1   |   | 1   |            |   |                | 1   |          |      
   |        |
| 1          | 1                            | 1  | 1   | 1  |  | 1   | 1   | 1   | 1   | 1   |   |   |   |   | 1   | 1          | 1                                    | 1  |  | 1   | 1   
   
   
  | 1   |  | 1   | 1   
   | 1   |   |   | 1   
  |  | 1   
   | 1   |   | 1   | 1  |  | 1  | 1  |   
  | 1   | 1              | 1   |   | 1   | 1          |   |                | 1   | 1        |      
   | _      |
| 1          | 1                            | 1  | 1   | 1  | 1  | 1   | 1   | 1   | 1   | 1   |   |   | 1   | 1   | 1   | 1          | 1                                    | 1  |  | 1   | 1   
   
   
  | 1   |  | -   | 1   
   | 1   |   | 1   | 1   
  |  | 1   
   | 1   |   | 1   | 1  |  | 1  | 1  |   
  | 1   | 1              | 1   |   | !   | 1          |   |                | 1   | 1        |      
   | _      |
| < 1.0      | < 1.0                        | < 2.0  | < 1.0   | < 1.0  | < 1.0  | < 1.0   | < 1.0   | < 2.0   | < 1.0   | 0.24.   | <pre></pre> | × 10  | < 1.0   | < 1.0   | < 1.0   | < 1.0      | < 1.0                                | 0.1.   | < 2.0  | < 10  | < 1.0   
   
   
  | < 10  | 0<br>1<br>0  | < 1.0   | < 10  | < 10  | - 1 0   | < 1.0   
   | < 1.0   
  | < 3.0                                      | < 1.0   | < 1.0   
   | <pre>&lt; 2.0</pre>   | < 3.0   | < 1.0  | <pre>&lt; 1.0</pre>  | < 1.0  | < 1.0  | < 1.0   
  | < 1.0   | < 1.0          | < 3.0   | < 3.0   | < 1.0   | < 1.0      | <pre>&gt; 1.0</pre>   | × 1.0<br>× 1.0 | < 1.0                                       | < 1.0    | × 1.0  | :,     |
| 1          | 1                            | 1  | 1   | 1  | 1  | I   | 1   | I   | 1   | 1   |   |   | 1   | 1   | 1   | I          | 1                                    | I  |  | 1   | I   
   
   
  | 1   | 1  | 1   | 1   
   | 1   |   | 1   | 1   
  |  | 1   
   | I   | 1   | 1   | 1  |  | 1  | 1  |   
  | 1   | I              | 1   |   | 1   | 1          | 1   |                | I   | 1        |      
   |        |
| < 1.0      | < 1.0                        | < 2.0  | < 1.0   | < 1.0  | < 1.0  | < 1.0   | < 1.0   | < 2.0   | < 1.0   | < 1.0   | < 10  | × 10  | <b>8</b>  | < 1.0   | < 1.0   | < 1.0      | < 1.0                                |  | < 2.0  | < 10  | < 1.0   
   
   
  | < 10  | × 10   | < 1.0   | < 10  
   | <ul><li>10</li><li>10</li></ul>   | <b>5</b> 10   | < 1.0   | < 1.0   
  | <ul><li>&lt; 3.0</li><li>&lt; 10</li></ul> | < 1.0   
   | < 1.0   | <ul><li>&lt; 2.0</li><li>&lt; 1.0</li></ul>                   | < 3.0   | <pre>&lt; 1.0</pre>  | <pre>&lt; 1.0</pre>  | < 1.0  | < 1.0  | < 1.0   
  | S   | 1400           | < 3.0   | <ul><li>&lt; 2.0</li><li>&lt; 3.0</li></ul>       | 4.4   | 4.5        | <pre>&lt; 1.0</pre>   | × 1:0<br>× 1:0 | < 1.0                                       | < 1.0    | ×
1.0<br>× 1.0   | ?: ,   |
| < 1.0      | < 1.0                        | < 2.0  | < 1.0   | < 1.0  | < 1.0  | < 1.0   | < 1.0   | < 2.0   | < 1.0   | < 1.0   | < 10  | × 1.0   | <b>52</b>   | < 1.0   | < 1.0   | < 1.0      | < 1.0                                |  | < 2.0  | < 10  | < 1.0   
   
   
  | < 10  | v 1 0  | 1.5   | < 10  
   | < 10  | < 10  | < 1.0   | < 1.0   
  | < 3.0<br>< 10                              | < 1.0   
   | < 1.0   | <ul><li>&lt; 2.0</li><li>&lt; 1.0</li></ul>                   | < 3.0   | <pre>&lt; 1.0</pre>  | <pre>&lt; 1.0</pre>  | < 1.0  | < 1.0  | 41.0  
  | 12  | 1200           | < 3.0   | <ul><li>3.0</li></ul>                             | 7   | 5.4        | × 1.0   | × 1.0          | <ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul> | < 1.0    |
<pre>&lt; 1.0</pre>  | ;;;    |
| < 1.0      | < 1.0                        | < 2.0  | < 1.0   | < 1.0  | < 1.0  | < 1.0   | < 1.0   | < 2.0   | < 1.0   | 0.35 J  | <pre>&lt; 10</pre>  | × 10  | 38  | < 1.0   | < 1.0   | < 1.0      | < 1.0                                | 0.1.0  | < 2.0  | < 10  | < 1.0   
   
   
  | < 10  | v 10   | 0.84 J  | < 10  
   | 4.9 J   | < 10<br>< 10  | < 1.0   | < 1.0   
  | < 3.0                                      | < 1.0   
   | < 1.0   | <ul><li>&lt; 2.0</li><li>&lt; 1.0</li></ul>                   | < 3.0   | <pre>&lt; 1.0</pre>  | × 1.0  | < 1.0  | < 1.0  | < 1.0   
  | 8.4   | 1900           | < 3.0   | 2.3J  | 7.8   | 4.9        | <ul><li>&lt; 1.0</li><li></li></ul>   | < 1.0          | < 1.0                                       | < 1.0    |
<ul><li>&lt; 1.0</li><li>&lt; 1.0</li><li>&lt; 1.0</li></ul> | 21     |
| 1          | 1                            | 1  | 1   | 1  | 1  | 1   | 1   | I   | 1   | 1   |   | 1   | 1   | 1   | 1   | I          | 1                                    | I  |  | 1   | I   
   
   
  | 1   | 1  | 1   | 1   
   | : 8   | 3 :   | 1   | 1   
  |  | 1   
   | 1   | 1   | 1   | 1  |  | 1  |  | e :   
  | 1   | 1400           | 1   |   | 1   | 1          | 1   | 1              | < 1.0                                       | 1        |      
   |        |
| 1          | 1                            | 1  | 1   | 1  | 1  | 1   | 1   | I   | 1   | 1   |   |   | 1   | 1   | 1   | I          | 1                                    | I  |  | 1   | I   
   
   
  | 1   | 1  | 1   | 1   
   | 1   |   | 1   | 1   
  | 1  | 1   
   | I   | 1   | 1   | 1  | 1  | 1  | I  |   
  | 1   | 1              | 1   | 1   | 1   | 1          | 1   |                | 1   | 1        | 1    
   |        |
| 1          | 1                            | 1  | 1   | 1  | 1  | 1   | 1   | 1   | 1   | 1   |   |   | 1   | 1   | 1   | I          | 1                                    | 1  |  | 1   | 1   
   
   
  | 1   | 1  | 1   | 1   
   | 1   |   | 1   | 1   
  |  | 1   
   | 1   | 1   | 1   | 1  |  | 1  | 1  | 1   
  | 1   | 1              | 1   |   | 1   | 1          | 1   | 1              | 1   | 1        |      
   |        |
| 1          | 1                            | 1  | 1   | 1  | 1  | 1   | 1   | I   | 1   | 1   |   |   | 1   | 1   | 1   | I          | 1                                    | 1  |  | 1   | 1   
   
   
  | 1   | 1  | 1   | 1   
   | 1   |   | 1   | 1   
  |  | 1   
   | 1   | 1   | 1   | 1  |  | 1  | 1  |   
  | 1   | 1              | 1   |   | 1   | 1          | 1   |                | 1   | 1        |      
   |        |
| 1          | 1                            | 1  | 1   | 1  | 1  | I   | 1   | 1   | 1   | 1   |   | 1   | 1   | I   | 1   | 1          | 1                                    | 1  |  | 1   | 1   
   
   
  | 1   | 1  | 1   | 1   
   | 1   |   | 1   | 1   
  |  | 1   
   | 1   | 1   | 1   | 1  |  | 1  | 1  | <b>I</b> I  
  | 1   | 1              | 1   |   | 1   | 1          | 1   |                | 1   | 1        |      
   |        |
| 1          | 1                            | 1  | 1   | 1  | 1  | 1   | 1   | 1   | 1   | 1   |   | 1   | 1   | 1   | 1   | 1          | 1                                    | 1  |  | 1   | 1   
   
   
  | 1   | 1  | 1   | 1   
   | :   |   | 1   | 1   
  |  | 1   
   | 1   |   | 1   | 1  |  | 1  | 1  | : :   
  | :   | 1              | 1   |   | 1   | 1          | : :   |                | 1   | -        |      
   |        |
| < 10       | < 10                         | < 20   | < 10  | < 10   | < 10   | < 10  | < 10  | < 20  | < 10  | 37  | < 10  | × 10  | < 10  | < 10  | 16  | < 10       | < 10<br>2                            |  | < 20   | < 100   | < 10  
   
   
  | < 100   | <ul> <li>4 10</li> <li< td=""><td>&lt; 10</td><td>&lt; 100</td><td>&lt; 100</td><td>&lt; 10</td><td>&lt; 10</td><td>&lt; 10</td><td>&lt; 30<br/>&lt; 100</td><td>&lt; 10</td><td>&lt; 10</td><td>&lt; 10<br/>&lt; 10</td><td>&lt; 30</td><td><ul> <li>40</li> <li>4</li></ul></td><td><ul> <li>10</li> <li>10</li> <li>10</li> </ul></td><td>&lt; 10</td><td>&lt; 10</td><td>&lt; 10</td><td>40</td><td>8</td><td>&lt; 30</td><td><ul><li>30</li></ul></td><td>23</td><td>&lt; 10</td><td>v 10<br/>10</td><td>× 10</td><td><ul><li>&lt; 10</li><li>&lt; 10</li></ul></td><td>&lt; 10</td><td>&lt; 10<br/>&lt; 10</td><td>?</td></li<></ul> | < 10  | < 100   | < 100   | < 10  | < 10  | < 10  
   
  | < 30<br>< 100                              | < 10  | < 10  | < 10<br>< 10  | < 30  
   | <ul> <li>40</li> <li>4</li></ul> | <ul> <li>10</li> <li>10</li> <li>10</li> </ul>   | < 10   | < 10   | < 10  
  | 40  | 8              | < 30  | <ul><li>30</li></ul>                              | 23  | < 10       | v 10<br>10  | × 10           | <ul><li>&lt; 10</li><li>&lt; 10</li></ul>   | < 10     | < 10<br>< 10   | ?      |
| 1          | 1                            | 1  | 1   | 1  | 1  | 1   | 1   | 1   | 1   | 1   |   |   | 1   | 1   | 1   | 1          | 1                                    | 1  |  | 1   | 1   
   
   
  | 1   | 1  | 1   | 1   
   | 1   |   | 1   | 1   
  |  | 1   
   | 1   | 1   | 1   | 1  |  | 1  | 1  |   
  | 1   | 1              | 1   |   | 1   | 1          | 1   | 1              | 1   | 1        |      
   |        |
| 1          | 1                            | 1  | 1   | 1  | 1  | 1   | 1   | 1   | 1   | 1   |   |   | 1   | 1   | 1   | 1          | 1                                    | 1  |  |   | 1   
   
   
  | 1   | 1  | 1   | 1   
   | 1   |   | 1   | 1   
  |  | 1   
   | 1   | 1   | 1   | 1  |  | 1  | 1  |   
  | 1   | 1              | 1   |   | 1   | 1          | 1   |                |   |          |      
   | -      |
| (4)        | (3)                          | (3)  | (2)   | (3)  | (3)  |   |   | (4)   | (2)   | (-)   | (2)   | (2)   | (7)<br>(1)  | (2)   | (1)   |            | £.                                   | (Z)  | 6  | (4)   | Ē   
   
   
  | (1)   | Ē  |   |   
   | (4)   | (1)   | (4)   | (2)   
  | (4)  | (2)   
   | (2)   | (4)   | (4)   | (2)  | (4)  | (1)  | (4)  | (4)   
  | (4)   | (4)            | (2)   | (+)   |   | 1          | (2)   | (6)            | (2)   | (2)      | (2)  
   | j      |
| 5.74       | 60                           | 10   | 5   | 25   | 5  | •   | •   | 0.01  | 20  | 15  | 0.05  | 600   | 2   | 5   | 12  | •          | 370                                  | 0 1  |  | 5560  | 240   
   
   
  | - 20  | 250  |   | •   
   | 14100   | <mark>ر ا</mark>  | 1.34  | 33  
  | 810  | 5   
   | 100   | 100   | 20.3  | 20   | 4./<br>1.68  | 8.3  | 197  | 1.39  
  | 447   | 143            | 5   |   |   | •          | 100   | ц.             | 750   | 100      |
4.71<br>5  | ,      |
| ethane     | ethane                       | ethane   | ethane  | ethane   | ethene   | ropene  | enzene  | ropane  | enzene  | enzene  | (FDR)   | enzene  | (EDC)   | ropane  | enzene  | enzene     | ropane                               | enzene   | ropane   | tanone  | toluene   
   
   
  | xanone  | toluene  | toluene   | Itanone   
   | Acetone   | enzene  | ethane  | noform  
  | isulfide                                   | thoride   
   | enzene  | roform  | lethane   | ,2-DCE   | ethane   | tethane  | nethane  | tadiene   
  | enzene  | (MTBE)         | Chloride  | enzene  | enzene  | enzene     | Styrene   | (PCE)          | oluene                                      | ,2-DCE   | (TCE)
   | 1-2-12 |
| etrachloro | 1-Trichloro                  | etrachloro   | 2-Trichloro   | 1-Dichloro   | 1-Dichloro   | -Dichlorop  | Trichlorob  | Trichlorop  | Trichlorob  | 2 cbloropr  | moethane  | Dichlorobe  | oroethane   | Dichloropi  | rimethylbε  | Dichlorobe | -Dichlorop                           |  | Dichloropi   | 2-Bu  | 2-Chlorot   
   
   
  | 2-He;   | 4-Chloroft   | -Isopropylt   | thyl-2-pen  
   | < 2   | Bromohe   | dichlorom   | Bron  
  | Carbon di                                  | on Tetrac   
   | Chlorobe  | Chlor   | Chlorom   | Dickloron  | 10chlorom  | Dibromom   | Ddifluorom   | achlorobut  
  | sopropylbe  | utyl ether (   | ethylene C  | n-Butylbe   | n-Propylbe  | ec-Butylbe | 24-Ruitvibe   | ornethene      | T   | trans-1, |
-Dichlorop   |        |
| ,1,2-Te    | 1,1,1                        | 1,2,2-Tt   | 1,1,2   | 1,1  | 1,1  | 1,1   | 1,2,3-1   | 1,2,3-  | 1,2,4-1   | 1,2,4-T   | 2-Dihror  | 1.2-1   | 1.2-Dichlc  | 1,2-  | 1,3,5-T   | 1,3-1      | 1.3-                                 | -+   | 2.2-   |   |   
   
   
  | CM C  | 7  | 4-  | 4-Mei   
   |   |   | Bromo   |   
  |  | Carb  
   |   |   |   | 0.1 0  | Dibrom   |  | Dichlord   | Hexa  
  | 5   | iyl tert-bu    | Me  |   |   | Ñ          | 4   | Tetrachic      |   |          |
ans-1,3-<br>Trichlo  |        |
|            | 2.Tetrachloroethane 5.74 (4) | 2-Tetrachloroethane       5.74       (4)            <1.0 | 2-Tetrachloroethane       5.74       (4)             <1.0 | 2: Tetrachloroethane       5.74       (4)  -1.0       <1.0 | 2-Tetrachloroethane       5.74       (4)   -1.0       <1.0 | $ \begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$ | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | $: Tetrachloroethane5.74(4)\dots\dots< 10< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0< 1.0$ | $ \frac{1}{1} \  \  \  \  \  \  \  \  \  \  \  \  \ $ | $\cdot$ Tetrachloroethane $5.74$ $(4)$ $\cdots$ $=$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$ $< 10$   | $ \begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$ | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |            |                                      | Filtenchlosenbane         6.14         (1) | 11         11< | 1.1         1.1 <th1.1< th=""> <th1.1< th=""> <th1.1< th=""></th1.1<></th1.1<></th1.1<> | 11-intentionentane         5/3         (a)         ···         ·· </td <td>Titalitationentinal         5.74         (i)         ···         ··&lt;</td> <td>11         11         12&lt;</td> <td>Therealityonerstanes 5, 1 (a) and the stand of the</td> <td>1         1</td> <td>11. Transmissione         3.4         (i)         ···         (i)         ···         (i)         ···         (i)         (i)     &lt;</td> <td>111</td> <td>Interfluction         0         1         &lt;</td> <td>1/-         1/-<td>1/</td><td>1// Transmentantia         2//         1         2//         1         2///         2///         2///     &lt;</td><td>Normethone         Normethone         Normeth</td><td>Ti filte functionality if if</td><td>Mathementane         Mathementane         Mathematia         Mathmatrix         Mathmatrix         M</td><td>Minimulation         Minimulation         Minimulation&lt;</td><td>Matrixements         Matrixements         Matrixements&lt;</td><td>Internetatione         Internetatione         Interneatione         Internetatione         Internet</td><td>Mitologeneral         Mitologeneral         Mitologe</td><td>1 Manutement         1         <t< td=""><td>Norwer         Norwer         Norwer&lt;</td><td>Provisionality</td><td>1         1</td><td></td><td>Mathematical and and any operational any operat</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<></td></td> | Titalitationentinal         5.74         (i)         ···         ··< | 11         11         12<   | Therealityonerstanes 5, 1 (a) and the stand of the | 1         1 | 11. Transmissione         3.4         (i)         ···         (i)         ···         (i)         ···         (i)         (i)     < | 111 | Interfluction         0         1         < | 1/-         1/- <td>1/</td> <td>1// Transmentantia         2//         1         2//         1         2///         2///         2///     &lt;</td> <td>Normethone         Normethone         Normeth</td> <td>Ti filte functionality if if</td> <td>Mathementane         Mathementane         Mathematia         Mathmatrix         Mathmatrix         M</td> <td>Minimulation         Minimulation         Minimulation&lt;</td> <td>Matrixements         Matrixements         Matrixements&lt;</td> <td>Internetatione         Internetatione         Interneatione         Internetatione         Internet</td> <td>Mitologeneral         Mitologeneral         Mitologe</td> <td>1 Manutement         1         <t< td=""><td>Norwer         Norwer         Norwer&lt;</td><td>Provisionality</td><td>1         1</td><td></td><td>Mathematical and and any operational any operat</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<></td> | 1/   | 1// Transmentantia         2//         1         2//         1         2///         2///         2///     < | Normethone         Normeth | Ti filte functionality if | Mathementane         Mathematia         Mathmatrix         Mathmatrix         M | Minimulation         Minimulation<   | Matrixements         Matrixements< | Internetatione         Interneatione         Internetatione         Internet | Mitologeneral         Mitologe | 1 Manutement         1 <t< td=""><td>Norwer         Norwer         Norwer&lt;</td><td>Provisionality</td><td>1         1</td><td></td><td>Mathematical and and any operational any operat</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<> | Norwer         Norwer< | Provisionality | 1         1 |   | Mathematical and and any operational any operat |            |   |                |   |          |  |        |

Screet	sning		W	W-57			-MM**	58			MW-59			**	1W-60			<b>NW</b> **	/-61			MW-62				MW-63		
Leve	els Sourt	ce Aug-	-18 Aug-17	Aug-16	Aug-15	Aug-18 A	/ug-17	Aug-16 A	ug-15 A	ug-18 AL	ig-17 Au	g-16 Aug	1-15 Aug-	18 Aug-1	7 Aug-16	Aug-15	Aug-18	Aug-17	Aug-16 A	Aug-15 A	ug-18 /	Aug-17 /	ug-16 Au	ug-15 Aug	J-18 Aug	-17 Aug	-16 Auç	g-15
-Volatile Organic Compounds	(ng/L):									:		:										:	:		-			
1,2,4-Trichlorobenzene 70	0 (2)	1		< 50	1	1	1	1	1	< 10	< 50 <	10		< 10	1	1	1	1	1	1	1	< 10	< 10		` '	0	•	1
1,2-Dichlorobenzene 60	00 (2)	1	1	< 50	1	1	1	1	1	< 10	<ul><li>20</li></ul>	-	1	< 10	1	1	1	1	1	1	:	< 10	< 10	1	v ·	0	•	;
1,3-Dichlorobenzene -	. 4	1		< 50		1	1	1	1	<ul> <li>10</li> <li>10</li> </ul>	× 20	10	1	<pre>&lt; 10</pre>	1	1	1	1	1	1	1	< 10	< 10	1			00	,
1-Methylnanhthalene	1 (5)			< 50						10	200	2 (2		01				1				< 10 < 10	< 10					
2.4.5-Trichlorophenol 117	70 (4)			< 50				1	1	< 10	200	2 0		<ul><li>10</li><li>10</li></ul>	1	1	1	1	1	1		< 10	< 10		/ `v   :			
2,4,6-Trichlorophenol 11.	.9 (4)			< 50	1	1	1	1	1	< 10	50 <	10		< 10	1	1	1	ı		1	1	< 10	< 10		•	0	0	,
2,4-Dichlorophenol 45.	5.3 (4)		1	< 100	1			1	1	< 20 <	100 <	20		< 20	1	1	1	1	1	1	1	< 20	< 20	•	* *	00	•	
2,4-Dimethylphenol 35.	54 (4)	1		< 50	1	1	1	1	1	< 10	< 50 <	10		< 10	1	1	1	1	1	1	1	< 10	< 10		` '	0	•	1
2,4-Dinitrophenol 38.	3.7 (4)	1	1	< 100	1	1	1	1	1	< 20	100	20		< 20	1	1	1	1	1	1	:	< 20	< 20	1	•	0	; 0,0	;
2,4-Dinitrotoluene 2.3	37 (4)	1		< 50	1	1	1	1	1	< 10	20	10		<ul> <li>&lt; 10</li> <li>&lt; 10</li> </ul>	1	1	1	I	1	1	1	< 10	< 10	•	• •	0	•	1
2,6-Dinitrotoluene 0.4	185 (4)	1		< 50	:		1	1	1	< 10	× 50	10		<ul> <li>10</li> <li>10</li> </ul>	1	1	1	1	1	1	:	< 10	< 10		· `	00	'	,
2-Chloronaphthalene /3	33 (4)		•	0 2 2 0	1	1	1	1		<ul> <li>10</li> <li>10</li> </ul>	v 20	10	•	<pre> 4 10</pre>	1	1	1	1	1	1		< 10	0 V V	1	· ·		; 	,
	(4)	1		0 2 2 0	1	1	1	1	1	< 10	× 20	10	1	× 10		1	1	1	1	1		< 10	< 10		· ·			,
2-Methylnapntnalene 30 2-Methylphenol 93	(L) 02			002 \						, 10 10 10	v v 02.	<u>-</u>		- 10 - 10				1				01 v	<ul> <li>10</li> <li>10</li> </ul>	• •	v \			
2-Nitroaniline 190	(1)			< 50						< 10	200	2 0		<ul><li>10</li><li>10</li></ul>		1		1				< 10	< 10		/ `v			
2-Nitrophenol				< 50	1					< 10	20 <	10		< 10	1	1		1			:	< 10	< 10		· ·	0		,
3,3 '-Dichlorobenzidine 1.2	25 (4)			< 50	1		1	1	1	< 10	< 50 <	10	-	< 10	1	1	1	1	1	1	1	< 10	< 10	-	v i	0	•	
3+4-Methylphenol 93(	30 (1)		1	< 50	1	1	1	1	1	< 10	< 50 <	10		< 10	1	1	1	1	1	1		< 10	< 10	-	v ·	0 < 1	•	
3-Nitroaniline -		1	1	< 50	1	1	•	1	1	< 10	< 50 <	10	-	< 10	1	1	1	1	ł	1	:	< 10	< 10	1	v ·	0	•	,
6-Dinitro-2-methylphenol 1.5	52 (4)	1	1	< 100	1	1	1	1	1	< 20	100	20		< 20	1	1	1	1	1	1	:	< 20	< 20	•	v	0	; 0,0	,
Comopnenyl pnenyl etner			•	09								' 0 0	   	0. 9				1	1	1		01. >	01.0	•	· ·		- -	,
4-Chloro-3-methylphenol -	7 (5)	•		05 >		1		1	1	. v 10		2 0	1	- 10 - 10								01.0	10					
	(n)			200 2						10	200											10	< 10					
4-Nitroaniline 38	8 (5)			< 50	1	1		1	1	< 10	50 ×	10	-	< 10	1	1	1	1		1		< 10	< 10	-	· ·	0	· • •	
4-Nitrophenol -				< 50	1	1	1	1	1	< 10	< 50 <	10		< 10	1	1	1	1	1	1	:	< 10	< 10		v ·	0 < 1	' 0	
Acenaphthene 53	35 (4)	1	-	< 50	1	1	1	1	1	< 10	< 50 <	10		< 10	1	1	1	I	1	1	:	< 10	< 10	•	v ·	0	•	,
Acenaphthylene -	į	1		< 50	1		1	1	1	< 10	< 50 <	10		< 10	1	1	1	1	:	1	:	< 10	< 10	-	•	0	' 0 0	,
Aniline 13	30 (5)	1		< 50			1	1		< 10	× 20	10		<ul> <li>10</li> <li>10</li> </ul>	1	1	1	1	1	1	:	< 10	< 10		• •	0	· 0 0	,
	20 (4)			05 >		1		1		. v 10		2 0	 	v 10				1				01.0	10		v ``			
Benzo(a)anthracene 0.1	( <u>5</u> ) (1) (4)			< 50						10	200 2			, 10 , 10								<pre>&gt; 10</pre> >	< 10		v `v 			
Benzo(a)pyrene 0.2	2 (2)			< 50	1	1	1	1	1	< 10	50 <	10		< 10	1	1	1	I	:	1	:	< 10	< 10		· ·	0	•	,
Benzo(b)fluoranthene 0.34	343 (4)		1	< 50	1	1	1	1	1	< 10	< 50 <	10		< 10	1	1	1	1	-	1	:	< 10	< 10	-	v ·	0 < 1	; 0	;
Benzo(g,h,i)perylene		1		< 50	1	1	1	1	1	< 10	< 50 <	10		< 10	1	1	1	1	1	1	1	< 10	< 10	•	v ·	0	•	
Benzo(K)rluoranthene 3.4	43 (4)			<pre>&gt; 20</pre>						<pre>&lt; 10</pre>	× 1 200	10	   	- 10				1	1	1		< 10	< 10	1	· •			
Benzvi alcohol 200				< 50						< 10	200	10										<ul><li>10</li></ul>	< 10		♀ `v : : :			
2-chloroethoxy)methane 59	9 (1)			< 50	1	1	1	1		< 10	× 20	10		< 10	1	1	1	1	1	1		< 10	< 10	-	, v	0	· • •	
Bis(2-chloroethyl)ether 0.10	37 (4)		1	< 50	1	1	1	1		< 10	< 50 <	10		< 10	1	1	1	1	:	1	:	< 10	< 10	•	v ·	0	і 0	,
s(2-chloroisopropyl)ether 9.8	81 (4)	1		< 50	1	1	1	1	1	< 10	< 50 <	10	1	< 10	1	1	1	1	:	1	:	< 10	< 10	•	• •	0	•	;
Is(2-ethylhexyl)phthalate 6	5 (2)	1		< 50	-		-	•		< 10	<pre>&lt; 20</pre>	10	 	<pre>&lt; 10</pre>	•	•	•	1	:		:	< 10	< 10	•				;
Carbazole -	(c) .			< 50						<pre>&gt; 10</pre> >	200 ×		 	- 10 - 10				1				< 10	< 10		v `v 			
Chrysene 34.	(4)			< 50	1					< 10	20 <	10		< 10	1	1		1			:	< 10	< 10		· ·	0		,
Dibenz(a,h)anthracene 0.03	343 (4)		1	< 50	1			1		< 10	< 50 <	10		< 10	1	1	1	1	1	1	1	< 10	< 10	1	v ·	0 < 1	і 0	,
Dibenzofuran		1		< 50	1	1	1	1		< 10	< 50 <	10	1	< 10	1	1	1	1	:	1	:	< 10	< 10	•	v ·	0	; 0 0	,
Dimethyl phthalate 148	800 (4)			09 0						<pre>&lt; 10</pre>	× 100	- C	 	- 10 - 10	•					1		<pre>&lt; 10</pre>	< 10	• •				
Di-n-butvl phthalate 88	35 (4)			< 50						10	200 2			, 10 , 10								<pre>&gt; 10</pre> >	< 10		v `v 			
Di-n-octyl phthalate				8	1	1		1	1	< 10	50 ×	10	-	< 10	1	1	1	1		1		< 10	< 10	-	· ·	0	; 0 0	
Fluoranthene 80.	72 (4)		1	< 50	1	1	1	1		< 10	< 50 <	10		< 10	1	1	1	ı	:	1	1	< 10	< 10	1	v ·	0	•	,
Fluorene 28	38 (4)	1	1	20 	1	1	1	1	1	<ul> <li>10</li> <li>10</li> </ul>	20	10		<ul> <li>&lt; 10</li> <li></li> </ul>	1	1	1	1	1	1	:	< 10	< 10	1	•	0	· 0	,
Hexachlorobenzene 0.05 Hexachlorobutadiene 1.35	9/6 (4) 87 (4)			< 50 < 50						< 10 < 10 <	v > 0	10		<pre>&lt; 10</pre>				1		11		< 10	< 10 < 10	 	v v			
achlorocyclopentadiene 50	0 (4)			< 50	1	1	1	1	1	< 10	20 <	10		< 10	1	1	1	1	1	1		< 10	< 10		· ·	0	0	
Hexachloroethane 3.2	28 (4)		1	< 50	1					< 10	< 50 <	10		< 10	1	1	1	1	1	1	:	< 10	< 10	-	v ·	0	•	
Indeno(1,2,3-cd)pyrene 0.3-	343 (4)			< 50	1	1		1	1	< 10	< 50 <	10	1	< 10	1	1	1	1	1	1	1	< 10	< 10	1	•	0	· 0 (	;
Isophorone 78	31 (4)	1	1	< 50	1	1	-	1	1	< 10 <	< 50   <	- 10	•	< 10	1	1	1	1	:	-	:	< 10	< 10	•	·	0 <1	0	1

		$\left  \right $																									ſ
Scre	reening So.	urce	A	19-MM				*MW-58	A 110 45		MW.	-59 A 40	A 45	4 01		. 40	. 45	40	**MW-61	A 45	A112 40	-9-MW	2	A 40	-MW	40	15
Nashthalasa	4 65	¥	ine oi-gu	i-fine /i-fi	-Gny ol	Sink ci	I-GUNA OI	I-fine /	i-fine o	I-fine (	Aug-17	ol-gu	A CI-UUA	W oi-fin	nd 11-gu	ne oi-f	6nv ci-6	JUN AUG	ai-gun interest	ci-gue	oi -gue	Aug-17	Hug-Io Aug-1	ol-gun c	Aug-17 A	nk ol-br	ci-6
Naphthalene	C0.1	(4)	' 	240			1		•	01. >	06 >	01. >	1		. 10		•	•		1	1	01. >	1	1	01. >	1 01 9	
Nitrobenzene	1.4	(4)	•	< 20		1	1	1	1	< 10	< 50	< 10	1	•	< 10		:	'	:	1	1	< 10	< 10	1	< 10	< 10	1
N-Nitrosodimethylamine 0.	.0017	(4)	1	- < 50		1	1	1	1	< 10	< 50	< 10	1		< 10		 	1	:	1	1	< 10	< 10	1	< 10	< 10	1
N-Nitrosodi-n-propylamine	0.11	(2)	1	< 50	1	1	1	1	1	< 10	< 50	< 10	1	•	< 10	-	 	'	:	1	1	< 10	< 10	1	< 10	< 10	1
N-Nitrosodiphenylamine 0.	.0049	(4)	1 	- < 50		1	1	1	1	< 10	< 50	< 10	1	•	< 10		•	'	1	I	1	< 10	< 10	1	< 10	< 10	1
Pentachlorophenol	170 (	(4)	1	- 100		1	1	1	1	< 20	< 100	< 20	1	1	< 20		1	1		1	1	< 20	< 20	1	< 20	< 20	1
Phenanthrene	-	(4)	1		1	1	1	1	1	< 10	< 50	< 10	1	•	< 10	-	•	'	:	1	1	< 10	< 10	1	< 10	< 10	1
Phenol 5	5760 (	(4)	•	< 50		1	1	1	1	< 10	< 50	< 10	1	-	< 10		-	•	:	1	:	< 10	< 10	:	< 10	< 10	1
Pyrene	117 (	(4)	1	< 50		1	1	1	1	< 10	< 50	< 10	1	-	< 10	-	-	•	-	1	1	< 10	< 10	1	< 10	< 10	1
Pyridine	20	(1)		- < 50			1	1	1	< 10	< 50	< 10	1		< 10		1	•		1	1	< 10	< 10	1	< 10	< 10	
General Chemistry (mg/L):																		-							2		
Fluoride	16	(3)		- < 0.50			1	1	1	< 0.10	< 0.50	< 0.10	< 0.10	1	0 10					1	<0.50	< 0.10	< 2.0 < 0.10	< 0.10	< 0.10	16 < 0	10
Chloride	250 (	(2)		340	 ,		1		1	190	200	190	240	' 	190			;			1	13	14	<b>6</b>	110	100	20
Nitrite		5		- < 0.50						<10	< 0.50	< 0.10	< 0.10		0.10						0.068 J	0.016 J	< 1.0 < 0.10	0.057	0.13	0.10 < 0	10
Bromide		ì					1	1	1	<b>3.1</b>	3.4	< 0.10	1.2	, 	3.8			•		1	0.22	0.071 J	< 0.10 < 0.10	12	8.1	1.5	2
Nitrate	10	(3)		< 0.50	   0		1		1	<1.0	0.26 J	0.6	0.28		26						0.078 J	0.094 J	< 1.0 < 0.10	32	35	39 7	8
Phosphorus	,			3.1	1		1	1	1	< 0.50	< 2.5	< 0.50	< 0.50		- 0.50						6.7 J	< 10	< 10 < 10	5.3 J	< 0.50 <	0.50 <	10
Sulfate	600	(3)		<2.5	1		1	1	1	180	170	200	780	•	1300			•	1	1	3600	3700	4000 4000	1200	1300	200 17	00
Carbon Dioxide (CO <sub>2</sub> )		:			1		1	1	1	1000	1000	1000	940	1	720		•			1	H 009	580	500 520	610	580	470 48	8
Alkalinity (CaCO <sub>3</sub> )				981.8			1		1	1050	1105	1094	1035	-	86.2					1	622.9	626.3	550 573.9	616.5	597	00.7 52	2.5
Bicarbonate (CaCO <sub>c</sub> )				081 8	-					1050	1105	1004	1035		786.2						6220	676.3	550 573 0	616.5	507	00 7 F 23	2
										3	8	5	200		100												
	100	10,			ç						10,050	0000	0 033		0.060							10,060			10.050		
		2									0.000	01200	10.0		0.000												020-
	2.0	(2)																									020-
	0.05	3)		100.0 2						< 0.00A	0200.0 2 0		0.0060								<ul><li>0.0020</li><li>0.0060</li></ul>	< 0.200.0 <					0200
	1015	0)(0)		9000 ~						V 0.000	0 0000 V 0	00000	0.0050	- N	0.0050						~ 0.0050	<ul> <li>0.0000</li> <li>0.0050</li> </ul>			0.0000		0050
Selenium	0.05	(2)		~ 0.05	30			1	1	< 0.050	< 0.050	< 0.050	< 0.050	;	0.050					1	< 0.050	< 0.050 <	< 0.050 < 0.050 < 0.05	0 < 0.050	< 0.050 <	0.050 < 0	050
Silver	0.05	(2)		- < 0.005	1		1	1	1	< 0.005	0 < 0.0050	< 0.0050	<pre>c 0.0050</pre>	, v	0.0050 -			1		1	0.013	< 0.0050 <	: 0.0050 < 0.005	0.0064	< 0.0050 <	0.0050 < 0.0	0050
Mercury 0	).002	(3)	1	- < 0.000.	120		1	1	1	< 0.002	0 < 0.00020	< 0.00020 <	0.00020	0.0	00054 J		1		1	1	0.000066 J	< 0.00020 <	0.00020 < 0.000	20 < 0.00020	< 0.00020 < 0	00020 < 0.0	0020
Dissolved Metals (mg/L):																											
Arsenic (	0.01 (	(2)	-	< 0.02	0č		-	1	1	<0.020	0.032	< 0.020	< 0.020	-	.054 -		•	•	:	1	<0.020	0.046	< 0.020 < 0.02	0 <0.020	0.034 <	0.020 < 0.	.020
Barium	1.0	(3)		 1.9	1		1	1	1	0.073	0.083	0.076	0.055	-	0.023		-	•	!	1	0.011 J	0.01 J	< 0.020 < 0.02	0 0.011	< 0.020	.023 < 0.	.020
Cadmium 0	) .005	(2)	1	< 0.002	20	1	1	1	1	< 0.002	0 < 0.0020	< 0.0020	< 0.0020	)   	0.0020	-	•	1	!	I	< 0.0020	< 0.0020 <	<pre>c 0.0020   &lt; 0.002</pre>	20 < 0.0020	< 0.0020 <	0.0020 < 0.0	0020
Calcium	•		' 	- 120	1	1	1	1	1	170	160	<b>50</b>	250	1	230		•	•	:	1	450	450	450 470	330	310	320 47	70
Chromium	0.05	(3)	'	< 0.00(	100	1	1	1	1	< 0.006	0 < 0.0060	< 0.0060	< 0.0060	) V	090000	-	•		!	1	< 0.0060	< 0.0060 <	0.0060 < 0.006	s0 < 0.0060	< 0.0060 <	0.0060 < 0.0	0900
Copper		(3)	' 	< 0.00(		1	1	1	1	< 0.006	0900.0 < 0	< 0.0060	< 0.0060	-	- C 200		•	•	1	1	< 0.0060	< 0.0060 <	<pre>c 0.0060 &lt; 0.006</pre>	30 < 0.0060	< 0.0060 < 0.0060	).0060 < 0.0	0060
Iron		( <u>?</u> )	' 	<b>5</b> 00			1	1	1	<b>c</b> :/	<b>6.9</b>	2.C	<b>4.3</b>	-			! !	•	1	•	0.015 J	0.0046 J	0.15	0.054	< 0.020	3.9 < 0. 2.0 < 0.	020
Lead 0	0.015	(2)	•	< 0.00	20	1	1	1	1	0.000	< 0.0050	< 0.0050	< 0.0050	v 1	0.0050		•	•	:	1	< 0.0050	< 0.0050 <	<pre>&lt; 0.0050 &lt; 0.005</pre>	0.0059	< 0.0050 <	0.0050 < 0.0	0050
Magnesium	•		•	+ 4	1	1	1	1	1	20	49	26	69	1	. 88		•	•	:	1	37	œ	38 38	110	110	99 13	90
Manganese	0.2	(3)	•	3.3 	1	1	1	1	1	1.5	1.8	1.9	1.9		0011 J		•	•	:	1	1.5	1.8	1.2 1.4	0.48	0.5	0.73 0.6	<u>8</u>
Potassium			•	4.1	1	1	1	1	1	m	2.8	3.7	3.6	1	4		•	•	:	1	ი	9.1	10 9.5	3.7	3.7	4.1	ڢ
Selenium	0.05	(3)	1 	< 0.00£		1	1	1	1	0.11	< 0.050	< 0.050	< 0.050	v 1	0.050	-	 		:	1	< 0.050	< 0.050	< 0.050 < 0.05	0 < 0.050	< 0.050 <	0.050 < 0.	.050
Silver	0.05	(3)	1	< 0.05	1	1	1	1	1	< 0.005	0 < 0.0050	< 0.0050	< 0.0050	v v	0:0050	-		'	:	1	0.012	< 0.0050 <	: 0.0050 < 0.005	0.0088	< 0.0050 <	0.0050 < 0.0	0050
Sodium			•	410	1	1	1	1	1	430	390	480	470	-	. 099		•	•	:	1	1400	1400	1600 1500	380	460	420 58	8
Uranium	0.03	(3)	1	< 0.1(	 0	1	1	1	1	< 0.10	< 0.10	< 0.10	< 0.10	•	- 0.10	-	•	•	!	1	< 0.10	< 0.10	< 0.10 < 0.10	<pre>&lt; 0.10</pre>	< 0.10 <	0.10 < 0	0.10
Zinc	10 (	(3)	-	0.081	:	1		•		<0.020	0.022	0.021	0.036		0.036	-	-	•			<0.020	0.02	0.051 0.028	< 0.020	0.02	0.1 0.0	03
Total Petroleum Hydrocarbons (m	ng/L):																										
Diesel Range Organics 0.	.0398	(9)	1		1	1	1		1	<0.40	0.75	0.85	0.32	v 	: 0.20	-	' '	-	:	1	< 0.40	< 0.20	< 0.20 < 0.20	0.20	< 0.20 <	0.20 < 0	0.20
Gasoline Range Organics			'	520	1		1	1	1	2.3	1.0	1.8	÷	v 	0.050	-	' '	-	!	1	0.023 J	< 0.050	< 0.050 < 0.05	0 0.034	< 0.050 <	0.050 < 0.	.050
Motor Oil Range Organice	0308	(S)		250			-	-	-	< 2 5 5	< 25	102	105	-	, o E	-	-	-		1	< 25	< 2 C	102 - 20E	< < > 5	102	· 2 5 - < 2	20

 Note:

 (1) EPA - Regional Screening Levels (June 2017) -Tap Water

 (2) EPA - Regional Screening Levels (June 2017) -MCL

 (2) EPA - Regional Screening Levels (June 2017) -MCL

 (3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

 (4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)

 (5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds

 (6) NMED groundwater screening level for unknown oil

 (7) MED groundwater screening level for unknown oil

 (6) NMED groundwater screening level for combined Nitrate (As N) + Nitrite (As N) to meet hold time

 (7) A = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet thold time

 (8) NMED model available

 (1) A = Randysis not required and/or well contains separate phase

 (1) A = Analysis not required and/or well contains separate phase

 (1) = 6/27/13 modification on FVGWM Plan to temove MW-8 and replace with MW-52.

 (2) = Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase

	Aug-15	< 1.0	< 1.0	< 2.0	< 1.0	<ul> <li>1.0</li> <li>1.0</li> </ul>	v v	< 1.0	< 2.0	< 1.0	<ul> <li>1.0</li> <li>0.1</li> <li>0.1</li></ul>	< 2.0	0.1.0	v v	× 10	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	0.0	10	< 4.0	< 1.0	< 1.0	< 10	< 10	<ul><li>1.0</li><li>1.0</li></ul>	v 1.0	v v	< 3.0	< 10	< 1.0	<ul> <li>1.0</li> <li>2.0</li> <li>3.0</li> <li>4.1</li> <li>4.1</li></ul>	< 2.0 < 1.0	< 3.0	< 1.0	<ul> <li>1.0</li> <li>0</li> </ul>	v v 10	< 1.0	< 1.0	<ul> <li>1.0</li> <li>1.0</li> </ul>		< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	v 1.0 10	v v 2.0	<ul><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><l< th=""><th>&lt; 1.0</th><th>× 1.0</th><th><ul><li>&lt; 1.0</li></ul></th><th>&lt; 1.0</th></l<></ul>	< 1.0	× 1.0	<ul><li>&lt; 1.0</li></ul>	< 1.0
70	Aug-16	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1	1	1		1	1	1	1	1	1	1		1	1	1	1		1	1	1		1	1	1		1	1	1	1	1				1		1	1
-MM	Aug-17	< 1.0	< 1.0	< 2.0	< 1.0	<ul> <li>1.0</li> <li>1.0</li> </ul>	0.1 v	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	0.1.0	v. 1 v	× 10	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	0.0	10	< 4.0	< 1.0	< 1.0	< 10	2.7 J	< 1.0	<pre></pre>	0.1 v	< 3.0	< 10	< 1.0	<ul> <li>1.0</li> <li>2.0</li> <li>4.1</li> <li>4.1</li></ul>	< 10	< 3.0	< 1.0	< 1.0	× 1.0	< 1.0	< 1.0	< 1.0		< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	v 1.0 1.0	v 1 10 10	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>	< 1.0	× 1.0	< 1.0	< 1.0
	Aug-18	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	0.1 v	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	0.1.0 V	v 10 10	× 10	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	0.0	2 10 10	< 4.0	< 1.0	< 1.0	< 10	< 10	< 1.0	<ul> <li>1.0</li> <li>4</li> <li>4</li></ul>	0.1 v	< 3.0	< 10	< 1.0	< 1.0	< 10	< 3.0	< 1.0	< 1.0	× 1.0	< 1.0	< 1.0	< 1.0	0.1.v	< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	<pre>&lt; 1.0</pre>	v 1 0 1 1 0	<ul><li>1.0</li></ul>	< 1.0	<pre>&lt; 1.0</pre>	< 1.0	< 1.0
	Aug-15	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1	1	1		1	1	1	1	1	1	1			1	1	1		1	1	1		1	1	1			1	1	1	1				1		1	1
69	Aug-16	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1	1	1		1	1	1	1	1	1			1	1	1	1		1	1	1		1	1	1			1	1	1	1				1		1	1
-MM**	Aug-17	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1	1	1		1	1	1	1	1	1				1	1	1		1	1	1		1	-	1		1		1	1	1				1		1	1
	Aug-18	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1	1	1		1	1	1	1	1	1	1		1	1	1	1		1	1	1		1	1	1		1	1	1	1	1				1		1	1
	Aug-15	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	0.1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	<pre>&gt; 1.0</pre>	v 10	× 10	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	0.0	210 210	< 4.0	< 1.0	< 1.0	< 10	< 10	< 1.0	<ul> <li>1.0</li> <li>4</li> <li>4</li></ul>	0.1 v	< 3.0	< 10	< 1.0	< 1.0	< 10	< 3.0	< 1.0	< 1.0	0.1 ×	< 1.0	< 1.0	< 1.0	0.1.0	< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>	v.1 v 1 0 1 v	<ul><li>1.0</li><li>1.0</li></ul>	< 1.0	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li><li></li></ul>	< 1.0	< 1.0
88	Aug-16	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	0.1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	<pre>&gt; 1.0</pre>	v.1 v	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	0.0	210 210	< 4.0	< 1.0	< 1.0	< 10	< 10	< 1.0	<pre></pre>	0.1 v	< 3.0	< 10	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 1.0	<pre>&gt; 1.0</pre> >	< 1.0	< 1.0	< 1.0	0.1 ×	< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	<ul><li>&lt; 1.0</li><li>&lt; 1 0</li></ul>	v.1 v 1 0 1 v	<ul><li>&lt; 1.0</li></ul>	< 1.0	<ul><li>&lt; 1.0</li><li>&lt; 1.0<th>&lt; 1.0</th><th>&lt; 1.0</th></li></ul>	< 1.0	< 1.0
MW-6	Aug-17	< 1.0	<ul> <li>1.0</li> <li>1.0</li> <li>1.0</li> </ul>	< 2.0	< 1.0	< 1.0	0.1 v 1 0 1 v	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	0.1 ×	0.1 ×	< 1.0	<ul> <li>1.0</li> <li>1.0</li> </ul>	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	01.0	<ul> <li>10</li> <li>10</li> <li>10</li> </ul>	< 4.0	< 1.0	< 1.0	< 10	1.4 J	< 1.0	<ul><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul>	<ul><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul> <li></li>	< 3.0	< 10	< 1.0	< 1.0	< 10	< 3.0	< 1.0	< 1.0	<ul><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul>	< 1.0	< 1.0	< 1.0	0.1.2	< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>	v.1 v 1 1 0	<ul><li>&lt; 1.0</li></ul>	< 1.0	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li><li></li></ul>	< 1.0	< 1.0
	Aug-18	1	1	1	1	1		1	1	1	•	1	1		1	1	1	1	1	1	1	1		1	1	1	1	1	< 1.0	-				1	1		1	1	1			< 1.0	1	110	2	-		1	1			< 1.0	1	1		1
	Aug-15	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	0.1 0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	0.1 ×	× 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	01.0	<ul><li>10</li><li>10</li></ul>	< 4.0	< 1.0	< 1.0	< 10	< 10	< 1.0	<pre></pre>	<pre></pre>	< 3.0	< 10	< 1.0	< 1.0	< 10	< 3.0	< 1.0	< 1.0	<ul><li>1.0</li><li>1.0</li></ul>	< 1.0	< 1.0	< 1.0	v.1 ×	< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>	v.1 v 1 1 0	<ul><li>&lt; 1.0</li></ul>	< 1.0	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li><li></li></ul>	< 1.0	< 1.0
57	Aug-16	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	0.1 v	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	0.1 ×	<pre>&gt; 10</pre> >	× 10	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	0.2	10	< 4.0	< 1.0	< 1.0	< 10	< 10	< 1.0	< 1.0	<pre>&gt; 1.0</pre>	< 3.0	< 10	< 1.0	< 1.0	< 10	< 3.0	< 1.0	< 1.0	<pre>&gt; 1.0</pre>	< 1.0	< 1.0	< 1.0	<pre>&gt; 1.0</pre>	< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>	v.1 v 1 1 0	<ul><li>1.0</li><li>1.0</li></ul>	< 1.0	× 1.0	< 1.0	< 1.0
-WM	Aug-17	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	0.1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	<pre>&gt; 1.0</pre>	0.1 v	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	0 L V	10	< 4.0	< 1.0	< 1.0	< 10	2.9 J	< 1.0	0.1.0	0.1.0	< 3.0	< 10	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 1.0	<pre>&gt; 1.0</pre>	< 1.0	< 1.0	< 1.0	0.1.0	< 3.0	< 3.0	< 1.0	< 2.0	< 1.0	0.1 v 0.1 v	v.1 v 1 0 1 v	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>	< 1.0	× 1.0	< 1.0	< 1.0
	Aug-18	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1	1	1		1	1	1	I	1	< 1.0	•				1	1		1	1	1		1	< 1.0	1	. 10	2	1	1	1	1			< 1.0	1		1	1
	Aug-15	1	1	1	1	:		1	1	1	;	1	;		1	1	1	1	;	;	1	1		1	1	1	1	;	;	;			1	:	1		1	1	1		1	1	1		1		1	1	1				1		:	;
-66	Aug-16	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1	1	1		1	1	1	1	1	1	1		1	1	1	1		1	1	1		1	1	1		1	1	1	1	1				1	1	1	1
MW**	Aug-17	1	1	1	1	1		1	I	1	1	1	1		1	1	1	1	1	1	1	1		1	1	1	1	1	1	1		1	1	1	1		1	1	1		1	1	1		1	1	1	1	1				1	1	1	1
	Aug-18	1	1	1	1	1		1	1	1	1	1	1		1	1	1	1	1	1	1	1		1	1	1	1	1	1	1		1		1	1		1	1	1		1	1	1		1	1	1	1	1				1	1	1	1
	Aug-15	< 20	< 20	< 40	< 20	< 20	02 >	< 20	< 40	< 20	860	< 40	02 >		< 20	< 20	< 20	< 20	< 20	120	< 40	007 >	< 200	< 80	< 20	< 20	< 200	< 200	<b>1800</b>	70 - 20 - 20 - 20 - 20 - 20 - 20 - 20 -	02 >	< 60	< 200	< 20	< 20	< 20	09 >	< 20	< 20	02 ×	< 20	1900	< 20	80	09 ×	210	< 60	250	< 20	<pre>&gt; 20</pre>	N2 V V2 V	< 20	< 20	< 20 < 20	< 20	< 20
35	Aug-16	< 20	< 20	< 40	< 20	< 20	02 >	< 20	< 40	< 20	<b>480</b>	< 40	02.2	02 ×	< 20	< 20	< 20	< 20	< 20	130	< 40	007 >	< 200	< 80	< 20	< 20	< 200	< 200	<b>2700</b>	< 20	02 >	< 60	< 200	< 20	< 20	< 20	09 >	< 20	< 20	<pre>&gt; 20</pre> >	< 20	1200	< 20	700	<ul><li>60</li></ul>	46	< 60	220	< 20	<pre>&gt; 20</pre>	N2 ×	< 20	< 20	< 20	< 20	< 20
9-WM	Aug-17	< 20	< 20	< 40	< 20	< 20	02 >	< 20	< 40	< 20	520	< 40	07. >	4 <b>50</b>	< 20	3.8 J	< 20	< 20	< 20	150	< 40	002 >	200 200 200 200 200 200 200 200 200 200	6.8 J	< 20	11 J	< 200	< 200	2800	× 20	02 >	< 60	< 200	< 20	< 20	< 20	09 >	< 20	< 20	02 × 20	< 20	1700	< 20		<ul><li>60</li></ul>	27 J	6.4 J	270	<b>16 J</b>	20	N2 ×	< 20	< 20	<ul><li>20</li><li>20</li></ul>	< 20	< 20
	Aug-18	< 10	< 10	< 20	< 10	< 10	0 v	< 10	< 20	< 10	<b>230</b>	< 20	v 10	0 v	<ul> <li>10</li> </ul>	4	< 10	< 10	< 10	110	< 20	00. v	100	12.)	< 10	12	< 100	110	4500	< 10	01 v	< 30	< 100	< 10	< 10	< 10	2 30 × 30	< 10	< 10	× 10	< 10	1800	< 10	1500	< 30	51	10 J	300	<b>9</b>	<pre>&lt; 10</pre>	v 10 10	2.6.7	< 10	<pre>&lt; 10</pre>	× 10 2 5	< 10
	Aug-15	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	0.2 ×	< 2.0	< 4.0	< 2.0	< 2.0	< 4.0	0.2.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 8.0	< 4.0	0 2 7	0.2	< 8.0	< 2.0	< 2.0	< 20	< 20	< 2.0	< 2.0	<pre>&lt; 2.0</pre>	< 6.0	< 20	< 2.0	< 2.0	< 2.0	< 6.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	0.2 >	< 6.0 <	< 4.0	< 6.0	< 2.0	< 2.0	< 2.0	0.2 2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
14	Aug-16	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	0.1 v	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	0.1 ×	v 1 0 1 0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	01 V	× 10	< 4.0	< 1.0	< 1.0	< 10	< 10	< 1.0	<1.0	0.1 ~	< 3.0	< 10	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 1.0	<ul><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><l< th=""><th>&lt; 1.0</th><th>&lt; 1.0</th><th>&lt; 1.0</th><th>0.1 ×</th><th>&lt; 3.0</th><th>&lt; 2.0</th><th>&lt; 3.0</th><th>&lt; 1.0</th><th>&lt; 1.0</th><th><pre>&lt; 1.0</pre></th><th>v 1 0 1 0</th><th><ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul></th><th>&lt; 1.0</th><th><pre>&lt; 1.0</pre></th><th>&lt; 1.0</th><th>&lt; 1.0</th></l<></ul>	< 1.0	< 1.0	< 1.0	0.1 ×	< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	<pre>&lt; 1.0</pre>	v 1 0 1 0	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>	< 1.0	<pre>&lt; 1.0</pre>	< 1.0	< 1.0
9-WM	Aug-17	< 10	< 1.0	< 2.0	< 1.0	< 1.0	0.1 v	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	<pre>&gt; 1.0</pre>	v 1.0	× 10	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	0 I 0	10	< 4.0	< 1.0	< 1.0	< 10	< 10	< 1.0	<pre>&lt; 1.0</pre>	0.1 v	< 3.0	< 10	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 1.0	<pre>&gt; 1.0</pre> >	< 1.0	< 1.0	< 1.0	<ul><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><li>1.0</li><l< th=""><th>&lt; 3.0</th><th>&lt; 2.0</th><th>&lt; 3.0</th><th>&lt; 1.0</th><th>&lt; 1.0</th><th>د 1.0 ۱۹۵</th><th>v 1 0 1 0</th><th><ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul></th><th>&lt; 1.0</th><th><ul><li>&lt; 1.0</li><li>&lt; 1.0</li><li></li></ul></th></l<></ul>	< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	د 1.0 ۱۹۵	v 1 0 1 0	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li></ul>	< 1.0	<ul><li>&lt; 1.0</li><li>&lt; 1.0</li><li></li></ul>	<ul><li>&lt; 1.0</li></ul>	< 1.0
	Aug-18	< 1 0	< 1.0	< 2.0	< 1.0	< 1.0	0.1 V	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0	0.1 v	v - v	v - v	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 2.0	01.0	) ( ) ) ) ) ) ) )	< 4.0	< 1.0	< 1.0	< 10	< 10	< 1.0	<ul> <li>1.0</li> <li>2.1</li> </ul>	0.1.v	< 3.0	< 10	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 1.0	0.1 v	< 1.0	< 1.0	< 1.0	<pre>&gt; 1.0</pre>	< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	<pre>&lt; 1.0</pre>	v - v 1 0 1 0	<ul><li>&lt; 1.0</li></ul>	< 1.0	<pre>&lt; 1.0</pre>	< 1.0	< 1.0
	source	(4)	(3)	(3)	(2)	(3)	(2)		(4)	(2)	(1)	(2)	(2)	(2)	(2)	(1)		(1)	(2)	(2)		(4)		(1)	(1)	-		(4)	(2)	(1)	(4)	(4)	(4)	(2)	(2)	(4)	(4)	(2)	(4)	(4)	(4)	(2)	(4)	(4)	(2)	(4)			Į	(2)	(6)	(2)	(2)	(4)	( <del>1</del> )	(3)
creening	Levels	<b>5</b> .74	60	10	5	25 E	<u>،</u>		0.01	20	15	0.2	GU.U	2000	о <i>и</i> с	12		370	75	5	, ,	0000		36	250			14100	ς Σ	2 <u>9</u>	33	7.54	810	5	100	100	20.3	70	4.7	8.3	197	700	1.39	141	24	1.65		•		100	. v	750	100	4.71 5	1136	-
S	.)	Dethane	oethane	oethane	oethane	roethane	Dronene	benzene	propane	benzene	benzene	propane	Te (EUB)		Dronane	Denzene	benzene	propane	benzene	hthalene	propane	suranone		hthalene	otoluene	ritoluene	intanone	Acetone	Benzene	benzene	moform	nethane	disulfide	tchloride	benzene	loroform	nethane	1,2-DCE	propene	methane	nethane	benzene	utadiene		Chloride	hthalene	benzene	benzene	benzene	Styrene			1,2-DCE	propene	methane	chloride
	and Comments	-Tetrachlor	1.1-Trichlord	-Tetrachlor	1,2-Trichlor	1,1-Dichlor	1, 1-Dichloror	3-Trichlorot	3-Trichloro	4-Trichlorok	4-Trimethylk	no-3-chloro	2 Dichloroh	hloroethan	2-Dichloror	5-Trimethylc	3-Dichlorot	,3-Dichloro	4-Dichlorot	-Methylnapł	,2-Dichloro	2-Dhloro		Methylnaph	4-Chlorc	4-Isopropy	Methyl-2-pe		-1 	Bromot	Bro	Bromon	Carbon (	arbon Tetra	Chlorot	UND N	Chloron	cis-	,3-Dichloro	Dibromon	prodifluoron	Ethylt	exachlorobu	ISOPropyi	Methylene (	Napt	n-Butylt	n-Propylt	sec-Butylt	tort-Ruitvlh	whornethen		trans-	,3-Dichloro	hlorofluoron	Vinyl
	Victoria O	1112	1.1	1,1,2,2	1,			1,2,5	1,2,	1,2,-	1,2,4	1,2-Dibron	1,2-UI	1 2-Dic	4 7 7	1.3.5	, <b>-</b>	۲	7	<del>,</del>	7			5			4-N				BIOI			Ű					cis-1	חומר	Dichle		Ť	Mathyl tart-	ואוכנו וא יכיי						Tetrac	וכוומ		trans-1 Tric	Tricl	

0				ATAL C.A				M CE			**AAVA! C		_		TO ININ			VVV	60			2 14141 C				70		Γ
Lev	vels Sour	rceAug	g-18 Aug-	-17 Aug-1	6 Aug-15	Aug-18	Manual 1	7 Aug-16	Aug-15	Aug-18 /	ug-17 Ai	ug-16 Au	ig-15 Au	g-18 Aug-	17 Aug-16	3 Aug-15	Aug-18	Aug-17	-oo Aug-16	Aug-15	Aug-18 A	ug-17 A	a ug-16 Auç	g-15 Aug-	18 Aug-1	7 Aug-1	S Aug-1	5
ni-Volatile Organic Compounds	s (ug/L):																								-			
1,2,4-Trichlorobenzene	70 (2)	1	v v	10 < 10		< 10	< 50	< 10	1	1	1	1	1	1	< 10	1	1	I	< 10	:	1	1	'	- 1 1	0 < 10	1	1	
1,2-Dichlorobenzene 6	600 (2)	'	- -	10 < 10		< 10	< 50	< 10	1	1	1	1	1	1	< 10	1	1	1	< 10	1	1	1	'	- - -	0 × 10	1	1	
1,3-Dichlorobenzene	(0)	'	v 1	10 < 10	1	<ul> <li>4 10</li> <li>4 10</li> </ul>	< 20	< 10	1	1	1	1	1	1	× 10	1	1	1	< 10	1	1	1	•		0 × 10	1	1	
1,4-DICITIOLODETIZETTE 1-Mathvinanhthalana	11 (Z) 11 (Z)							012							v 1				v 10									
2.4.5-Trichlorophenol	170 (4)			10 < 10		< 10	< 50	< 10	1	1					× 10	1	1	1	< 10	1					× 10	1	!	
2,4,6-Trichlorophenol	1.9 (4)		· ·	10 < 10		< 10	< 50	< 10	1	1					< 10	1	1	1	< 10	1	1			- 1	> 10	1	!	
2,4-Dichlorophenol 4,	15.3 (4)		- 2	20 < 20	-	< 20	< 100	< 20	1	1	1	-			< 20	1	1	1	< 20	1	1	1	-	- < 2(	0 < 20	1	!	
2,4-Dimethylphenol 3	354 (4)	-	- -	10 < 10		3	< 50	< 10	1	1	-	-		-	< 10	1	1	1	< 10	1	1	-	' 	- 10	0 < 10	1	1	
2,4-Dinitrophenol 3.	38.7 (4)	-	2 2 2 1	20 < 20	1	< 20	< 100	< 20	1	1	1	-		1	< 20	1	1	1	< 20	1	1	-	•	<2(	0 < 20	1	!	
2,4-Dinitrotoluene 2.	2.37 (4)	1	v v	10 < 10	1	< 10	< 50	< 10	1	1	1	1		•	< 10	I	1	I	< 10	1	1	1	•	- 1 1	0 < 10	1	1	
2,6-Dinitrotoluene 0.	.485 (4)	' 	v v	10 < 10	1	< 10	< 50	< 10	1	1	1	1			< 10	1	1	1	< 10	1	1	1	•		0 < 10	1	1	
2-Chloronaphthalene 7	733 (4)	' 	v v	10 < 10	1	< 10	< 50	< 10	1	1	1	1		1	< 10	1	1	1	< 10	1	1	1	•	- 10	0 < 10	1	1	
2-Chlorophenol	91 (4)	-	- -	10 < 10	1	< 10	< 50	< 10	1	1	-	-	1	-	< 10	1	I	I	< 10	1	1	1	-	- 1(	0 < 10	1	1	
2-Methylnaphthalene	36 (1)	-	, ,	10 < 10		< 10	< 50	< 10	1	1	-	-	-	-	< 10	1	1	I	< 10	1	1	1	-	- 1(	0 < 10	1	1	
2-Methylphenol 9	930 (1)	•	v I	10 < 10	1	< 10	< 50	< 10	1	1	1	1	1	•	< 10	1	1	1	< 10	1	1	1	•	- 10	0 < 10	1	1	
2-Nitroaniline	190 (1)	-	, ,	10 < 10		< 10	< 50	< 10	I		1			-	< 10	1	I	I	< 10	1	1	1	•	- 10	0 < 10	1	1	
2-Nitrophenol		1	· ·	10 < 10	1	< 10	< 50	< 10	1	1	1	1		1	< 10	1	1	1	< 10	!	1	1	•		0 × 10	1	1	
3,3 -Dicnlorobenzidine 1	(4) (4)	' 	v I	10 < 10		< 10	v 50	< 10	1	1	1			1	v 10	1	1	1	10				'		0 v 10		!	
3+4-Metnyipnenol	930 (1)	' _	v			2	20 20	0. 0	1	1	•			•	01 9	1	1	1	0. 0	1	1	1	•			1	!	
3-Nitroaniine		i		10 × 10		01. >	0 C >	01. >	1	1	1			•	01 2	1	1	1	01. >	1	1	1	•				!	
4.0-DITILIO-Z-TITEUTIJIDITETIOI	(+) 70.1					v 40	v 1	<pre>&lt; 20</pre>							v 10				<pre>&lt; 20</pre>									
4-Chloro-3-methylibriol				10		0	202	2											10									
4-Chloroaniline 3	3.7 (5)			10 < 10		10	× 20	× 10		1					01	1		1	< 10		1							
4-Chlorophenyl phenyl ether	) -			10 < 10		< 10	< 50	< 10	1	1			-		× 10	1	1	1	< 10						<pre></pre>	1	!	
4-Nitroaniline	38 (5)	 _	·	10 < 10	1	< 10	< 50	< 10	1	1	1			1	< 10	1	1	1	< 10	1	1	1		- 1 - 1	0 < 10	1	1	
4-Nitrophenol		1	, ,	10 < 10		< 10	< 50	< 10	1	1	1	-	-	-	< 10	1	1	1	< 10	1	1	1	' 	- 10	0 < 10	1	1	
Acenaphthene 5	535 (4)	1	v v	10 < 10	1	< 10	< 50	< 10	1	1	1	1		1	< 10	I	1	I	< 10	1	1	1	'	-1(	0 < 10	1	1	
Acenaphthylene	•	'	- -	10 < 10	1	< 10	< 20	< 10	1	1	•	-		1	< 10	1	1	1	< 10	1	1	:	•	- - -	0 × 10	1	!	
Aniline 1	130 (5) 200 (5)	1	v v	10 < 10		< 10	< 50	< 10	1	1	1		;	1	< 10	1	1	1	< 10	1	1	1	•		0 < 10	1	1	
Anthracene 1	720 (4)	1	v I	10 < 10		× 10	20	< 10	1	1	1	1	1		<ul><li>10</li><li>10</li></ul>	1	1	1	< 10	1	1	1	•		0 ~ 10	1	1	
Azobenzene 1	1.2 (5)		v ·	10 < 10		< 10	20	< 10	1	1	•			1	× 10	1	1	1	< 10	1	1		•	-	0 v 10	1	!	
	0.12 (4)			10 4 10		v 10	0 2 2 0 2 0 2 0 2 0	v v							v v				v 10									Τ
	343 (4)			10 < 10		10	× 20	× 10	1	1	1				201	1	1	1	< 10		1							
Benzo(g,h,i)perylene	-		· ·	10 < 10	1	< 10	< 50	< 10	1	1	1				< 10	1	1	1	< 10	1	1			-1	0 × 10	1	1	
Benzo(k)fluoranthene 3.	3.43 (4)		v V	10 < 10	1	< 10	< 50	< 10	1	1	1	1		1	< 10	1	1	1	< 10	1	1	1	1	- ,	0 < 10	1	1	
Benzoic acid 75	5000 (1)	 	8.3	3 <b>J</b> < 20		< 20	92 J	< 20	1	1	1	1			< 20	I	I	1	< 20	1	1	1	•	6.7	J 6.7 J	1	1	
Bin/2 ablazathouthouthood 21	2000 (1)	-		10 < 10		< 10	< 20	< 10	1					•	× 10	1	•	•	< 10	1			•	-1	0 × 10	1	!	
Bis(∠-Cril0iOetri0Xy)/metharie	(1) (4) 137 (4)					v v	0 20 V	v v							v v				v 10									
Bis(2-chloroisopropul)ether 9.	1.81 (4)			10 < 10	1	< 10	< 50	< 10	1	1	1			-	< 10	1	1	1	< 10	1	1	1	1		<pre>&gt; 10</pre> >	1	1	Γ
Bis(2-ethylhexyl)phthalate	6 (2)		v I	10 < 10	1	< 10	< 50	< 10	1	1	1	1	1		< 10	1	1	1	< 10	1	1	1	1	- 1(	0 < 10	1	1	
Butyl benzyl phthalate 1	160 (5)		v I	10 < 10	1	< 10	< 50	< 10	1	1	1	1	1	1	< 10	1	1	1	< 10	1	1	1	1	- 1(	0 < 10	1	1	
Carbazole		'	- -	10 < 10	1	< 10 <	< 20	< 10	1	1	1	1		1	<ul><li>4</li></ul>	1	1	1	< 10	1	1	1	1	- - -	0 × 10	1	!	
Chrysene 3	34.3 (4)		v I	10 < 10		<ul><li>10</li><li>10</li></ul>	20	< 10	1	1	1	1		•	< 10	1	1	1	< 10	:	1	1	•		0 ~ 10	1	1	
Ulbenz(a,h)anthracene 0.0	0343 (4)	' -	v v	10 < 10		< 10	20 2 20	< 10	1	1	1			1	<pre>&gt; 10</pre>	1	1	1	< 10	1		1	•	-1			!	
Diethvl phthalate 14	1800 (4)			10 < 10		× 10	20	<ul> <li>10</li> <li>10</li> <li>10</li> </ul>							v 10				<ul> <li>10</li> <li>10</li> <li>10</li> <li>10</li> </ul>									
Dimethyl phthalate	-		v 1	10 < 10		< 10	< 50	< 10	1	1	1				< 10	1	I	1	< 10	1	1				<pre>&gt; 10</pre>			
Di-n-butyl phthalate 8	885 (4)	-	v I	10 < 10	1	< 10	< 50	< 10	1	1		-			< 10	1	1	1	< 10	1	1	:	1	- 1 ()	0 < 10	1	!	
Di-n-octyl phthalate		'	v I	10 < 10	1	< 10	< 50	< 10	1	1	1	1		•	< 10	1	1	1	< 10	1	1	1	•	- 1(	0 < 10	1	1	
Fluoranthene	802 (4)	' 	- -	10 < 10	1	< 10 <	< 20	< 10	1	1	1	1		1	<ul><li>4</li></ul>	1	1	1	< 10	1	1	1	1	- - -	0 × 10	1	!	
	288 (4)			10 < 10		01 v	0 9 7 9 0	< 10	1	1		1	-	 	01 v		1	1	< 10		1	-	1		0 v 10		!	
Hexachlorobutadiene 1.	387 (4)			10 < 10 < 10		> 10 > 10	<ul><li>50</li><li>50</li></ul>	× 10	1						> 10 > 10			1	<pre>&lt; 10</pre>						v v v 10			
Hexachlorocyclopentadiene	50 (4)		v I	10 < 10		< 10	< 50	< 10	1	1					< 10		1	1	< 10	1	1				<pre>&gt; 10</pre>		!	
Hexachloroethane 3.	3.28 (4)		v v	10 < 10	1	< 10	< 50	< 10	1	1		-		-	< 10	1	1	1	< 10	1	1		•	- 1(	0 < 10	1	!	
Indeno(1,2,3-cd)pyrene 0.	.343 (4)	-	- -	10 < 10	1	< 10	< 50	< 10	1	1	1	1	1	1	< 10	1	I	1	< 10	1	1	1	•	-1(	0 < 10	1	1	
Isophorone 7	781 (4)	•	- 1	10 < 10		< 10	< 50	< 10	I	-	-	-	-		< 10		-	-	< 10	1		-	-	- 10	0 < 10	1	!	

S	Screening S.	ource		MW-64				MW-65			<b>MM</b> **	-66			MW-67			MM	-68			**MW-69	6		Σ	W-70	
	Levels	-	Aug-18 A	ug-17 Aug	1-16 Aug-	15 Aug	-18 Aug	-17 Aug-1	6 Aug-15	Aug-18	Aug-17	Aug-16	Aug-15 /	Aug-18 Aug	g-17 Aug	-16 Aug-1	5 Aug-18	Aug-17	Aug-16	Aug-15 A	ug-18 Au	ig-17 Au	ug-16 Aug	g-15 Aug-	18 Aug-17	Aug-16	Aug-15
Naphthalene	1.65	(4)	-	< 10 < 1	10	2	1 19	<b>J</b> < 10	1	1	1	1	1	•	- -	0	1	1	< 10	1	-	-	-	-1(	0 < 10	1	!
Nitrobenzene	1.4	(4)		< 10 < 1	10	v	10 < 5	50 < 10	1	1	1	1	1	•	۱ ۲	 0	1	1	< 10	1	1		•	-1 ()	0 < 10	1	!
N-Nitrosodimethylamine	0.0017	(4)		< 10 < 1	10	v	10 <5	50 < 10	1	1	1	1	1	•	v I		1	1	< 10	1	1	1	•		0 < 10	1	-
N-Nitrosodi-n-propylamine	0.11	(2)		< 10 < 1	10	v	10 < 5	50 < 10	1	1	1	1	:	•	-	0	1	1	< 10	:	-	-	•	10	0 < 10	1	-
N-Nitrosodiphenylamine	0.0049	(4)		< 10 < 1	10	v	10 <5	50 < 10	1	1	1	1	1	•	- -	 0	1	1	< 10	1		-	· ·		0 < 10	1	!
Pentachlorophenol	170	(4)		< 20 < 2	20	, v	20 < 1	00 < 20	1	1	1	1	;	•	- <2	0	1	1	< 20	!	-	-		< 2(	0 < 20	1	!
Phenanthrene	-	(4)		< 10 < 1	10	v	10 < 5	50 < 10	1	1	1	1	1	•	,	 0	1	1	< 10	1		-	•	-1 1	0 < 10	1	!
Phenol	5760	(4)		< 10 < 1	10	<b>*</b>	3 22	<b>J</b> < 10	1	1	1	1	1	•	v I	 0	1	1	< 10	1	1	1	•		0 < 10	1	-
Pyrene	117	(4)		< 10 < 1	10	v	10 < 5	<u>50 &lt; 10</u>	1	1	1	1		1	- -		1	1	< 10	1	1			- 1 0	0 < 10	1	!
Pvridine	20	E		< 10 < 1	10	V	10 ×	< 10 < 10	1	1	1	1					1	1	< 10	1				1	< 10	1	1
General Chemistry (mo/l )	2				2	'		2							,				2						2		
	16	(0)	000	010			20	10 10 50	U E O					0 00	01	10 0.63	20.0	90.0	111	0.25				201	0 0 46		2.0
Anionia	0.1	(c)	> 0.25	× 10.0		2 2		10.0 > 01.0	00.0 >		1	1	1			0		8	<b>7</b>						0.4.0	1	5
Chloride	250	(?)	840	790 86	50 94(	<b>7</b>		00 5 0 0 0	210		1	1	;	14	2	<b>1</b>	09	<b>52</b>	8	<b>42</b>	1	1	' 		330 55	1	420 0 = 0
NITrite	-	(7)	< 2.0	< 2.0	10 < 2.	0	20 × 0.	10 < 0.50	09.0 >	1	1	1	1	× •	0.10 < 0.	10 < 0.10	<b>6.4</b>	< 0.10	< 0.10	< 0.10	1	1	•	- 0.1	00.0 > 00	1	0G.U >
Bromide	•		2.5	3.5 5.	.1 3.4	ۍ ب	5.0	9 4.2	4.5	1	1	1	1	0.16 0.	15 0.1	6 0.13	0.23	0.22	0.21	0.23	1	1	' 	-1.6	1.7	1	2.4
Nitrate	10	(3)	52	55 5(	8 40	0.2	1 J 0.03	<b>5 J</b> < 0.50	< 0.50	I	1	1	1	8.6	3 <sup>-0</sup>	13	4.5	7.6	5.6	7.6	-	-		0.2	3 < 0.50	1	< 0.50
Phosphorus			5.7.J <	.0.50 <5	50 < 1	0 3	~ °.	50 < 2.5	< 2.5	1	1	1	1	< 0.50 < 0	.50 < 0.	50 < 0.50	) < 0.50	< 0.50	< 0.50	< 0.50	1	-	•	- 22	5 < 2.5	1	< 2.5
Sulfate	600	(3)	1500	1500 151	00 150	0 56	14r	00 1600	970	1	1	1	1	240 1	80 27	0 240	200	250	260	280		-	•		0 1900	1	2400
Carbon Dioxide (CO <sub>2</sub> )			270	260 26	30 260	121	00 111	<b>30</b> 860	1300	1	1	1	1	330 3	20 29	0 310	250	220	210	180	1	-	•	790	830	1	780
Alkalinity (CaCO <sub>3</sub> )			275.2 2	76.3 27	r9 287.	7 13(	<b>11</b>	77 946	1335	1	1	1	1	351.6 34	5.5 314	.7 342.5	264.4	236.7	236.3	200.2	1			811.	5 804.5	1	809.4
Bicarhonata (CaCO <sub>2</sub> )	-		7E 2 2	76.0	780	7	21	71 046	1225					264 C 24	5 E 211	3 CV2 7	A NAC	7367	226.2	000				23	5 804 F		008
	-		7 7.617	17 0.0	107 6	2	5	040	0001		1		1	+c 0.100	+ IC C'C	047.0	1.402	1.002	C-0C2	2.002		-			C-+00 C	1	003.4
I otal Metals (mg/L):	100	(0)		010	001		001	000	0000									0.050			-	-	-				
Alsellic	0.0	(7)							070.0 ×		1	1	•		-0 × 0.20	20.0 > 0.02	0 < 0.020	000.0 >	<ul><li>&lt; 0.020</li><li>&lt; 0.02</li></ul>	<ul><li>0.020</li></ul>	1	1			CZ-U > U2	1	V2U.V
Barlum	2.0	(7)	0.29	0.0	10.0 CE	0.0	0.0	LL.0 8C	0.220		1	1	1	0.081	<b>C</b> ()	3 0.12	0.038	<b>500.0</b>	0.28	0.038	1	1	' 		5 U.19	1	0.023
Cadmium	0.005	·	< 0.0020 < (	0.0020 < 0.0	0020 < 0.00	020 < 0.0	020 < 0.0	020 < 0.002	$\frac{20}{20} < 0.0020$		1	1		0.0020 < 0.	0020 < 0.0	020 < 0.00	20 < 0.002	0 < 0.0020	< 0.0020	< 0.0020	1	1	' 		120 < 0.002		< 0.0020
Chromium	0.05	(3)	0.0097 0.1	<b>0020 J</b> < 0.0	0060 < 0.00	0.0 < 0.0	060 < 0.0	060 < 0.006	30 < 0.0060	1	1	1	•	0.0060 < 0.	0060 0.00	80 < 0.00	0.0060	0900.0 > 0	0.012	< 0.0060	1	1	•		1 0.0086	1	< 0.0060
Lead	0.015	(2)	< 0.0050 < (	0.0050 0.00	<b>088</b> < 0.0(	050 < 0.0	050 < 0.0	050 < 0.005	50 < 0.0050	1	1	1	•	0.0050 < 0.	0050 0.00	<b>20</b> < 0.00	0 < 0.005	0 < 0.0050	< 0.0050	< 0.0050	1	1	' 	< 0.00	50 < 0.005		< 0.0050
Selenium	0.05	(3)	< 0.050 <	0.050 < 0.0	050 < 0.0	50 < 0.1	050 < 0.1	050 < 0.05	0 < 0.050	1	1	1	•	< 0.050 < 0	.050 < 0.0	50 < 0.05	0 < 0.050	< 0.050	< 0.050	< 0.050	1	1	' 	< 0.0	50 < 0.050	1	< 0.050
Silver	0.05	(3)	< 0.0050 < (	0.0050 < 0.0	<u> 2050 &lt; 0.0</u>	0.01 0.01	<b>065</b> < 0.0	050 < 0.00£	50 < 0.0050	1	1	1		0.0050 < 0.	0050 < 0.0	050 < 0.00	0.0050	0 < 0.0050	< 0.0050	< 0.0050	1	1	' 		<b>4 J</b> < 0.005		< 0.0050
Mercury	0.002	(3)	<b>0.00012J</b> < 0	0.00020 < 0.00	0020 < 0.00	020 0.000	075J < 0.0	0020 < 0.000	20 < 0.00021		-		v 	0.00020 < 0.0	0020 < 0.00	020 < 0.000	20 < 0.0002	0 < 0.00020	< 0.00020 <	0.00020			-	0.0001	0 J < 0.0002	0	< 0.00020
Dissolved Metals (mg/L):																											
Arsenic	0.01	(2)	<0.020	<b>0.048</b> < 0.0	020 < 0.0	20 <0.0	0.0	<b>49</b> < 0.02	0 < 0.020	1	1	-	-	< 0.020 0.0	0.0 < 0.0	0.02 <	0 < 0.020	< 0.020	< 0.020	< 0.020		-		<0.02	20 0.028	1	< 0.020
Barium	1.0	(3)	0.011 J 0.	012 J 0.0	<b>124</b> < 0.0	20 0.1	12 0.0	39 0.045	0.2	1	1	1	1	0.026 0.0	0.0	13 0.039	0.027	0.023	0.029	0.022	-	-	•	0.014	LJ 0.016 J	1	0.024
Cadmium	0.005	(2)	< 0.0020 < (	0.0020 < 0.0	<u> 2020 &lt; 0.0(</u>	720 < 0.0	020 < 0.0	020 < 0.002	0 < 0.0020		1	1	v 	0.0020 < 0.	0020 < 0.0	020 < 0.00	20 < 0.0020	0 < 0.0020	< 0.0020	< 0.0020	-	1	•	< 0.00	200 < 0.002		< 0.0020
Calcium	•		450	480 50	<b>30</b>	20	35	370	270	1	1	1	1	130	30 14	0 150	130	100	6	33	1	1	•		620	1	640
Chromium	0.05	(3)	< 0.0060 < (	0.0060 < 0.0	000 < 0.00	<u> 0.0 &lt; 0.0</u>	060 < 0.0	060 < 0.006	30 < 0.0060	1	1	1		0.0060 < 0.	0060 < 0.0	060 < 0.00	0.006	0900.0 > 0	< 0.0060 <	< 0.0060	1	1	' 	< 0.00	900.0 < 0.006		< 0.0060
Copper	-	(3)	< 0.0060 < (	0.0060 < 0.0	0060 < 0.00	<u> 260 &lt; 0.0</u>	060 < 0.0	060 < 0.006	30 < 0.0060		1	1		0.0060 0.00	<b>16 J</b> < 0.0	060 < 0.00	0.006	0900.0 > 0	< 0.0060 <	< 0.0060	1	1	' 	< 0.00	900. < 0.006		< 0.0060
Iron	-	(3)	0.057 0	0.025	<ul><li>8</li><li>&lt; 0.0</li></ul>	20 5.	3	1 6.7	-	1	1	1	1	< 0.020 < 0	.020	<b>9</b> < 0.02	0 < 0.020	< 0.020	0.25	< 0.020	1	1	' 		25	1	8.5
Lead	0.015	(2)	< 0.0050 < (	0.0050 < 0.0	0050 < 0.00	050 < 0.0	050 < 0.0	050 < 0.005	0.0055	1	1	1	•	0.0050 < 0.	0050 < 0.0	020 < 0.00	0 < 0.0050	0 < 0.0050	< 0.0050 >	< 0.0050		1	•	< 0.00	150 < 0.005		< 0.0050
Magnesium	•		99	73	8	6	5 12	110	97	1	1	1	1	27	27 28	31	27	25	2	24	1				130	1	180
Manganese	0.2	(3)	0.0015 J 0.1	0011 J 0.0	37 < 0.00	720 1.	5 3	2 2.7	1.8	1	1	1	1	0.16 0.	14 0.4	1 0.38	0.0041	0.0028	0.06	0.0045	1	1	•		2.3	1	4.3
Potassium	•		4.5	4.7 5	5.1	'n	ю. 9	8	3.6	1	1	1	1	2.8	8.	۳ ب	2.8	3.0	2.7	2.6	1				3.5	1	4.2
Selenium	0.05	(3)	< 0.050 <	0.050 < 0.(	050 < 0.0	50 0.0	32 < 0.1	050 < 0.05	0 < 0.050	1	1	1	•	< 0.050 < 0	.050 < 0.0	50 < 0.05	0 < 0.050	< 0.050	< 0.050	< 0.050	-	-	•	< 0.0	50 < 0.050	1	< 0.050
Silver	0.05	(3)	0.012 <(	0.0050 < 0.0	<u> 7050 &lt; 0.0(</u>	0.01 0.01	<b>745</b> < 0.0	050 < 0.005	50 < 0.0050	1	1	1	•	0.0050 < 0.	0050 < 0.0	050 < 0.00	0.0050	0 < 0.0050	< 0.0050 >	< 0.0050	1	1	•		<b>5</b> < 0.005		< 0.0050
Sodium	•		800	830 83	30 850	55	74	800	680	1	1	1	1	80	38 79	74	120	110	110	110	-	-	•		580	1	730
Uranium	0.03	(3)	< 0.10 <	:0.10 < 0.	.10 < 0.	10 < 0.	10 < 0.	10 < 0.10	< 0.10	1	1	1	;	< 0.10 < 0	0.10 < 0.	10 < 0.1(	< 0.10	< 0.10	< 0.10	< 0.10	-	-	•	<0.1	0.10	1	< 0.10
Zinc	10	(3)	< 0.020 0	0.028 0.0	<b>\38</b> < 0.0	20 <0.(	0.1 0.1	<pre>&lt; 0.02</pre>	0 0.022	1	1	-	•	< 0.020 0.0	<b>)23</b> < 0.0	0.025 0.025	<0.020	0.026	< 0.020	0.027	-	-	-	<0.02	20 0.024	1	0.028
Total Petroleum Hydrocarbons	: (mg/L):																				-	-					
Diesel Range Organics	0.0398	(9)	< 0.40 <	: 0.20 < 0.	.20 < 0.2	20	8	4 4.8	7.7	1	1	1	1	< 0.40 < 0	).20 0.6	4 0.21	< 0.40	< 0.20	< 0.20	< 0.20	1	1			t0 < 0.20	1	< 0.20
Gasoline Range Organics		- 2	0.024 <	0.050 < 0.1	050 < 0.	2	6 0	20 7	19	1	1	1	1	< 0.050 < 0	.050 < 0.0	50 < 0.05	0 < 0.050	< 0.050	< 0.050	< 0.050	-	-		0.034		1	< 0.050
Motor Oil Range Organics	0.0398	(9)	< 2.5	< 2.5   < 2	2.5   <2.	5 2 2	.5 2.	.5 < 2.5	< 2.5		1			< 2.5	2.5   <2	5   < 2.5	<2.5	<2.5	< 2.5	< 2.5	-	-		- 22	5 < 2.5	1	< 2.5

VIEU grou	= No	= La	= An	= An	= 6/2	" "
idwater scre	screening le	oratory analy	alysis not req	alytical result	7/13 modifica	umns hidder

 Table 7

 Collection and Observation Wells Analytical Summary

 2018 Groundwater Remediation and Monitoring Annual Report

			CW	09+0			
g-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
۲ L	0.0012	< 1.0	< 0.001	<0.001	0.0025	0.0012	0.0016
001	<0.001	< 1.0	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
018	0.0037	0.0035	0.0031	0.0018	0.0023	< 0.001	0.0017
0015	0.0015	< 1.5	< 0.0015	< 0.0015	< 0.0015	< 0.0015	<0.0015
001	<0.001	< 1.0	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
3 J	1.2	1.2	1.4	0.83	0.73	1.7	1.4
!	1	3.2	1	!	1	0.51	2.7
2.5	< 2.5	< 2.5	<2.5	< 2.5	< 2.5	< 2.5	< 2.5

Constituents						OMO	0+60			
CONSULUE	n		Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Volatile Organic Compounds	(mg/L)									
Benzene	0.005	(2)				L70000.0	< 0.001	1	< 0.001	<0.001
Toluene	0.750	(3)	1	1	1	0.00043J	< 0.001	1	< 0.001	< 0.001
Ethylbenzene	002.0	(2)	1	-	-	0.00058J	< 0.001	1	< 0.001	< 0.001
Xylene 0	0.620	(3)	-	-	-	0.0025	< 0.0015	1	< 0.0015	<0.0015
MTBE 0	0.143	(4)	-			< 0.001	< 0.001	-	< 0.001	< 0.001
<b>Total Petroleum Hydrocarbon</b>	ls (mg/L	:(								
Diesel Range Organics 0.	.0398	(9)		-	1	13	1.3	1	1.7	3.2
Gasoline Range Organics			-	-	1	2.1	0.7	1	0.38	0.3
Motor Oil Range Organics 0.	.0398	(9)	-		-	< 5	< 2.5	1	< 2.5	< 2.5

Constituent	4					MO	1+50			
	3		Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Volatile Organic Compounds	(mg/L)									
Benzene	0.005	(2)				< 0.001	< 0.001	<0.005		1
Toluene	0.750	(3)	1	-	:	< 0.001	< 0.001	<0.005	-	1
Ethylbenzene	0.700	(2)	1	-	1	< 0.001	< 0.001	<0.005	-	1
Xylene (	0.620	(3)	1	1	ł	0.0025	< 0.0015	<0.0075	1	ł
MTBE	0.143	(4)	-		1	< 0.001	< 0.001	<0.005		1
<b>Total Petroleum Hydrocarbor</b>	/ɓɯ) su	L):								
Diesel Range Organics C	0.0398	(9)			-	13	4.2	2.5		1
Gasoline Range Organics		I	-	-	1	2.1	2.9	3.2	-	ł
Motor Oil Range Organics 0	0.0398	(9)	-	1	-	< ح	< 2.5	<2.5	1	-

				CR+C			
Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
< 0.001	< 0.001	< 0.001	< 0.001	0.0071	0.0039	0.110	0.210
< 0.001	< 0.001	< 0.001	< 0.001	<0.005	<0.001	< 0.005	<0.050
< 0.001	< 0.001	< 0.001	< 0.001	<0.005	<0.001	< 0.005	<0.050
< 0.0015	< 0.0015	< 0.0015	< 0.0015	<0.0075	<0.0015	< 0.0075	<0.075
0.00089 J	< 0.001	< 0.001	< 0.001	< 0.005	<0.001	< 0.005	<0.050
<0.40	<0.40	< 0.20	<0.20	<0.20	<0.20	1.3	<0.20
0.44	-	0.18	!	!	!	1.7	0.88
<2.5	<2.5	< 2.5	<2.5	< 2.5	< 2.5	3.1	< 2.5

									_
	Apr-15	-	1	1	1	ł		1	1
	Aug-15		1	1	1	1		1	1
	Apr-16	-	1	1	1	ł		1	1
4+10	Aug-16	-	1	1	1	1		1	1
0W1	Apr-17		1	1	1	ł		1	1
	Aug-17	-	1	1	1	1		1	1
	Apr-18	-	1	1	1	ł		1	1
	Aug-18		1	1	1	ł		1	1

			0W 1	09+9			
Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
-			0.000084J	<0.010	<0.010	< 0.001	<0.00 5
-	-	-	< 0.001	<0.010	<0.010	< 0.001	<0.010
-	-	-	0.0011	<0.010	<0.010	0.0017	<0.010
ł	1	1	0.00048J	<0.0 15	<0.015	< 0.0015	<0.0 15
-	-	-	0.39	0.41	0.28	0.41	0.460
-			86	3.8	28.0	5.0	12
-	-	-	1.5	1.5	1.8	1.00	1.8
1	!	!	₹5	<2.5	<2.5	< 2.5	< 2.5

Constitue	nte		
	2		àng
Volatile Organic Compound	ls (mg/L)		
Benzene	0.005	(2)	00.0
Toluene	0.750	(3)	~0×
Ethylbenzene	0.700	(2)	0.0
Xylene	0.620	(3)	<0.0>
MTBE	0.143	(4)	<0.
Total Petroleum Hydrocarbe	ns (mg/L	-):	
Diesel Range Organics	0.0398	(9)	0.3
Gasoline Range Organics	•	I	'
Motor Oil Range Organics	0.0398	(9)	$\checkmark$

Table 7 Collection and Observation Wells Analytical Summary 2018 Groundwater Remediation and Monitoring Annual Report

			MO	3+85			
g-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
:	< 0.001	-	< 0.001	<0.010	<0.010	< 0.001	1
:	< 0.001	1	< 0.001	<0.010	<0.010	< 0.001	1
:	< 0.001	1	C73000.0	0.011	0.011	< 0.001	1
:	< 0.015	1	< 0.0015	<0.0015	<0.0015	< 0.015	1
-	< 0.001		< 0.001	<0.010	<0.010	< 0.001	
-	6.7	-	75	6	56	12.0	-
1	<2.5	1	4.2	3.1	14	4.7	1
1	3.7	1	7.2	<2.5	<25	< 2.5	-

Constituents					MO	5+50			
		Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Volatile Organic Compounds (n	ng/L)								
Benzene 0.0	005 (2)		-	1	< 0.001		-	-	1
Toluene 0.7	750 (3)	1	-	1	< 0.001	1	1	-	-
Ethylbenzene 0.7	700 (2)	1	-	1	< 0.001	1	1	-	-
Xylene 0.6	520 (3)	1	-	1	< 0.0015	1	1	1	1
MTBE 0.1	143 (4)	-	-	-	0.00039J		-	-	
<b>Total Petroleum Hydrocarbons</b>	(mg/L):								
Diesel Range Organics 0.0	(9) (8)		1	ł	370	1	1	-	1
Gasoline Range Organics		1	1	ł	0.12	1	ł	1	1
Motor Oil Range Organics 0.0	(6)		:	!	70	1	1	1	-

16 Apr-16 Aug-15 /							
16 Apr-16							
9		1 1 1					
Aug-1	11	1 1 1					
Apr-17							
Aug-17	1 1	1 1 1	1 1 1 1				
Apr-18							
Aug-18	1	1 1	1 1 1				
	(3)	(3)	(3) (3)	(3) (2) (3) (4)	(3) (2) (3) (4)	(5) (3) (4) (6)	(2) (2) (3) (3) (3) (3) (3) (3) (3) (3) (4)
s (mg/L)	0.750	0.750	0.750 0.700 0.620	0.750 0.700 0.620 0.143	0.750 0.700 0.620 0.143 <b>0.143</b>	0.750 0.700 0.620 0.143 0.143 0.0398	0.750 0.700 0.620 0.143 0.143 0.0398
e Organic Compound	Toluene	Toluene Ethylbenzene	Toluene Ethylbenzene Xylene	Toluene Ethylbenzene Xylene MTBE	Toluene Ethylbenzene Xylene MTBE	Toluene Ethylbenzene Xylene MTBE <b>otal Petroleum Hydrocarb</b> Diesel Range Organics	Toluene Ethylbenzene Xylene MTBE MTBE <b>otal Petroleum Hydrocarb</b> Diesel Range Organics Gasoline Range Organics
Benzene 0.005 (2)		thylbenzene 0.700 (2)	thylbenzene         0.700         (2)  <				

	-15									
	Apr	-	1	1	1	1	-	1	1	
	Aug-15		1	1	-	ł		1	ł	
	Apr-16		1	1	1	1	-	1	1	
9+50	Aug-16		-	1	-	1		-	1	
	Apr-17	< 0.001	< 0.001	< 0.001	< 0.0015	0.0025	6.7	< 0.050	<5	
	Aug-17		-	1	-	1		-	1	
	Apr-18		1	1	1	ł	-	1	ł	
	Aug-18	-	ł	1	1	ł	-	1	ł	

			OW 2	22+00			
Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
1	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
-	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	<0.0015
	0.0059	0.0057	0.00029J	< 0.001	0.018	< 0.001	<0.001
	< 0.40	< 0.20	3.1	< 0.20	< 0.20	< 0.20	0.24
-	<0.05	<0.05	< 0.050	<0.05	< 0.05	< 0.05	< 0.050
1	<2.5	<2.5	ŝ	<2.5	<2.5	< 2.5	< 2.5

			<b>OW 2</b>	3+10			
Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
< 0.001	-	-	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
< 0.001	-	-	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
< 0.001	1	ł	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
< 0.0015	ł	ł	< 0.0015	< 0.0015	< 0.0015	< 0.0015	<0.0015
0.00045 J			0.0014	< 0.001	0.012	< 0.001	<0.001
<0.40			1.8	0.27	< 0.20	0.52	< 0.20
0.12	1	ł	0.084	<0.05	< 0.05	< 0.05	< 0.050
ло л Л		1	ц \	/ <sup>0</sup> Л	ло л Л	1 J F	<ul> <li>1</li> <li>2</li> <li>4</li> <li>4</li></ul>

	SnA			i	i	i	i		1	i	i	
			(2)	(3)	(2)	(3)	(4)	:(	(9)	ı	(9)	
nte	2	s (mg/L)	0.005	0.750	0.700	0.620	0.143	ns (mg/L	0.0398		0.0398	
Constituer		Volatile Organic Compound	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	<b>Total Petroleum Hydrocarbc</b>	Diesel Range Organics	Gasoline Range Organics	Motor Oil Range Organics	

2018 Groundwater Remediation and Monitoring Annual Report **Collection and Observation Wells Analytical Summary** Table 7

		_								
	Apr-15		1	1	1	1	-		-	1
	Aug-15		1	1	1	1			-	1
	Apr-16		1	1	1	1			1	1
8+10	Aug-16		< 0.001	< 0.001	< 0.001	< 0.0015	0.0047	< 0.20	<0.05	<2.5
MO	Apr-17		< 0.001	< 0.001	< 0.001	< 0.0015	0.0018	5.7	<0.05	55
	Aug-17		< 0.001	< 0.001	< 0.001	< 0.0015	0.0012	0.22	<0.05	ç۶
	Apr-18		1	1	1	1	-	-	1	1
	<u> -</u> 18							:		:

- though the second	e					0W 1	1+15			
CONSTITUENTS	0		Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Volatile Organic Compounds	(mg/L)									
Benzene	.005	(2)	-			4.4	3.9	3.8	2.5	1.7
Toluene	.750	(3)	ł	-	-	0.0014J	< 0.020	< 0.020	< 0.020	< 0.050
Ethylbenzene	.700	(2)	1	1	-	0.0096J	< 0.020	< 0.020	< 0.020	< 0.050
Xylene G	.620	(3)	ł	1	1	< 0.030	< 0.030	< 0.030	< 0.030	< 0.075
MTBE 0	.143	(4)	1		-	0.32	0.31	0.22	0.48	0.64
<b>Total Petroleum Hydrocarbon</b>	s (mg/L):									
Diesel Range Organics 0.	0398	(9)	1	!	-	120	540	110	54	94
Gasoline Range Organics	•		1	-	ł	13	12	14	4.5	0.3
Motor Oil Range Organics 0.	.0398	(6)	1		1	<50	<25	<25	< 25	< 25

			S MO	3+90			
Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
			< 0.001	< 0.001	< 0.001	< 0.001	<0.001
1	-	-	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
1	-	1	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
1	1	ł	< 0.0015	< 0.0015	< 0.0015	< 0.0015	<0.0015
-		-	0.0004J	< 0.001	< 0.001	< 0.001	<0.001
-	-	-	1.4	< 0.20	< 0.20	< 0.20	< 0.20
1	-	-	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
-	-	-	<5	<2.5	<2.5	< 2.5	< 2.5

				0/+0			
Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001
< 0.0015	< 0.0015	< 0.0015	< 0.0015	0.0026	< 0.0015	< 0.0015	<0.0015
0.0004 J	< 0.001	0.0014	0.0027	< 0.001	< 0.001	< 0.001	<0.001
<0.40	< 0.40	< 0.20	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20
0.14	0.10	0.091	0.10	0.078	0.13	< 0.05	0.12
<2.5	< 2.5	< 2.5	<5	<2.5	<2.5	< 2.5	< 2.5

#### ŝ

PA - Regional Screening Levels (June 2017) - Tap Water

PA - Regional Screening Levels (June 2017) - MCL

MED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

MED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)

PA Screening Level - Tap Water x 10 for carcinogenic compounds

MED groundwater screening level for unknown oil

= No screening level available

= Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time

= Analysis not required and/or well contains separate phase

= Analytical result exceeds the respective screening level.

= Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase

Constituent	y	
	ç	Auç
<b>Volatile Organic Compounds</b>	(mg/L)	
Benzene (	0.005 (2)	-
Toluene (	0.750 (3)	i 
Ethylbenzene (	0.700 (2)	i
Xylene (	0.620 (3)	i 
MTBE 0	0.143 (4)	i
Total Petroleum Hydrocarbon	ıs (mg/L):	
Diesel Range Organics 0	.0398 (6)	i
Gasoline Range Organics	1	i
Motor Oil Range Organics 0	.0398 (6)	i

tes	出
Ò	
Z	J

	'	*	i	
(5) $(4)$ $(3)$ $(3)$ $(6)$				

## Outfalls Analytical Summary 2018 Groundwater Remediation and Monitoring Annual Report **TABLE 8**

					Ē	ist Outfall #	5						East Ou	itfall #3			
	<u>ہ</u>		Aug-18	Apr-18	Aug-17	Apr-17	May-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	May-16	Aug-15	Apr-15
Volatile Organic Compo	on) spun	3/L)					-										
Benzene	0.005	(2)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.75	(3)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.7	(2)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylene	0.62	(3)	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
MTBE	0.143	(4)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
General Chemistry (mg/l	:(																
Fluoride	1.6	(3)	0.43	:	0.42	0.46	0.18	0.17	0.52	0.16	:	0.18	0.23	0.19	0.18	0.18	0.22
Chloride	250	(3)	4.4	:	9.5	8.4	3.4	2.7	8.6	3.1	:	4.1	18	3.4	3.8	3.6	4.4
Nitrite	-	(2)	<1.0	:	1.6	1.4	< 0.10	< 0.10	0.13	0.48 J	:	0.59 J	2.4	< 1.0	< 0.10	< 0.10	< 0.10
Bromide		•	0.074 J	ł	0.13	< 0.10	< 0.10	< 0.10	< 0.10	0.041 J	1	0.036 J	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nitrate	10	(3)	<1.0	ł	1.6	1.4	0.17	0.54	0.71	0.48 J	1	0.59 J	2.4	< 1.0	0.22	0.47	0.21
Phosphorus		•	0.64 H	ł	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.33 JH	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulfate	600	(3)	58	ł	190	88	45	42	8	44	:	51	120	48	44	47	54
Carbon Dioxide (CO <sub>2</sub> )		•	210	330	310	320	6	78	•	86	300	110	240	84	87	85	•
Alkalinity (CaCO <sub>3</sub> )	ı	•	233.9	354.6	343.7	343.1	97.96	85.24	344.8	93.12	319.9	126.5	253.5	94	95.28	95.16	111
Bicarbonate (CaCO <sub>3</sub> )	ı	•	233.9	354.6	343.7	343.1	97.96	85.24	344.8	93.12	319.9	126.5	253.5	94	95.28	95.16	111
Total Metals (mg/l):																	
Arsenic	0.01	(2)	< 0.020	< 0.020	0.02	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Barium	2.0	(2)	090.0	0.11	0.23	0.066	0.09	0.063	0.087	0.07	0.10	0.076	0.08	0.072	0.074	0.065	0.063
Cadmium	0.005	(2)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Chromium	0.05	(3)	< 0.0060	< 0.0060	0.021	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Lead	0.015	(2)	<0.0050	0.0054	< 0.0050	< 0.0050	0.0057	< 0.0050	< 0.0050	<0.0050	0.0052	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Selenium	0.05	(3)	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Silver	0.05	(3)	<0.0050	0.0056	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0059	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Mercury	0.002	(3)	0.000085 J	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	0.000060 J	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Dissolved Metals (mg/l):																	
Arsenic	0.01	(2)	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0010	0.001	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0010	0.001	< 0.020
Barium	1.0	(3)	0.055	0.065	0.095	0.066	0.068	0.06	0.089	0.065	0.09	0.067	0.08	0.069	0.072	0.062	0.062
Cadmium	0.005	(2)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Calcium			74	110	120	86	37	90	10	36	130	45	32	34	35	33	41
Chromium	0.05	(3)	< 0.0060	< 0.0060	< 0.0050	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Copper	-	(3)	< 0.0060	< 0.0060	< 0.050	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Iron	-	(3)	< 0.020	< 0.020	0.023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.0066 J	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Lead	0.015	(2)	< 0.0050	< 0.0050	< 0.00020	< 0.0050	< 0.00050	< 0.00050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.00050	< 0.00050	< 0.0050
Magnesium			14	22	26	21	6.2	5.2	21	6.2	25	8.2	16	9	5.8	5.9	7.1
Manganese	0.2	(3)	0.0043	<0.0020	0.076	0.0054	0.009	0.0021	0.011	0.0013 J	<0.0020	0.0031	< 0.0020	0.0032	0.0028	0.0031	< 0.0020
Potassium			1.0	1.4	2.1	1.6	1.6	1.7	1.4	1.8	2.2	1.8	2.1	1.9	1.6	1.8	1.9
Selenium	0.05	(3)	< 0.050	< 0.050	< 0.050	< 0.050	< 0.0010	< 0.0010	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.0010	< 0.0010	< 0.050
Silver	0.05	(3)	0.0024 J	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Sodium			36	61	67	58	16	14	57	18	80	22	53	18	17	17	2
Uranium	0.03	(3)	< 0.10	< 0.10	< 0.0050	< 0.10	0.0008	< 0.00050	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.0008	0.007	< 0.10
Zinc	10	(3)	0.065	< 0.020	0.030	< 0.020	0.02	0.019	< 0.020	0.056	< 0.020	0.031	< 0.020	0.025	< 0.010	0.018	< 0.020

 Notes:

 (1) EPA - Regional Screening Levels (June 2017) -Tap Water

 (2) EPA - Regional Screening Levels (June 2017) - MCL

 (2) EPA - Regional Screening Levels (June 2017) - MCL

 (3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

 (4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)

 (5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds

 (6) NMED groundwater screening level for unknown oil

 (7) MED groundwater screening level for unknown oil

 (8) NMED groundwater screening level for unknown oil

 (9) NMED groundwater screening level for combined Nitrate (As N) + Nitrite (As N) to meet hold time

 (6) NMED groundwater screening level for combined Nitrate (As N) + Nitrite (As N) to meet hold time

 (6) NMED for combined Nitrate (As N) + Nitrite (As N) to meet hold time

 (7) = Analytical result exceeds the respective screening level.

 (8) MED for meeting level

 (9) MED groundwater screening level for combined Nitrate (As N) + Nitrite (As N) to meet hold time

 (7) = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time

 (8) MED for meeting level for combined Nitrate (As N) + Nitrite (As N) to meet hold time

 (7) = Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or th

#### 105 of 109
### **TABLE 9**

# Seeps Analytical Summary - 2018 Groundwater Remediation and Monitoring Annual Report

					'																		
					See	0 #1						Seep	#2						Seep 1	#3			
	_	Aug-18	May-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-18	Apr-18	Aug-17	Apr-17 /	Aug-16	Apr-16 /	ug-15 /	Apr-15
Volatile Organic Compounds (I	mg/l):																						
Benzene 0.00	15 (2)	!	-	-	<0.001	1	<0.001	-	<0.001		-	:	-	-	1	:					<0.001		1
Toluene 0.75	50 (3)	ł	1	1	<0.001	1	<0.001	1	<0.001	-	1	1	1	1	1	1	1	-	!	1	<0.001	!	ł
Ethylbenzene 0.70	)0 (2)	1	1	1	<0.001	1	<0.001	1	<0.001	-	1	1	1	1	1	1	-	-	-	-	<0.001	-	1
Xylene 0.62	20 (3)	1	1		<0.0015	1	<0.0015	1	<0.0015		1	1	1	1	1	1	1	:	-	•	<0.0015	1	-
MTBE 0.14	13 (4)	1	-	1	0.043	1	0.041	1	0.013	-	-	-	-	1	-	-	-			-	<0.001		-
General Chemistry (mg/l):																							
Fluoride 1.6	3 (3)	1	<0.50	-	<0.5	1	0.35	-	<1.0	!	1	-	1	;	1	:	-		-		0.22	-	1
Chloride 250	) (3)	!	270	1	210	1	200	1	170		1	1	!	:	1	1	-	:	!	1	260	:	1
Nitrite 1.0	) (2)	1	<0.50	1	<1.0	1	<1.0	1	<1.0		1	1	1	1	1	1	!	1	!	1	<1.0	!	1
Bromide -	'	1	3.9		3.2	1	2.6	1	3.3		1	1	1	1	1	1	1		-	;	3.2	-	1
Nitrate 10	(3)	ł	<0.50	1	<1.0	1	<1.0	1	<1.0	-	1	1	1	1	1	1	1	-	-	1	<1.0	!	ł
Phosphorus -	'	1	<10	1	< 2.5	1	< 2.5	1	<5.0	!	ł	1	1	1	1	1	1	1	1	1	<2 <2	1	1
Sulfate 600	) (3)	1	1000	1	1100	1	1300	1	1200	!	1	1	1	1	1	1	1	-	1	1	2500	1	1
Carbon Dioxide (CO <sub>2</sub> ) -	I	1	430	1	470	1	450	1	390	1	ł	1	1	1	ł	1	1	1	ł	1	330	1	1
Alkalinity (CaCO <sub>3</sub> ) -	1	ł	453.2	1	507.1	1	479.6	1	433.1	ł	ł	1	1	1	1	1	1	1	1	1	365.4	1	1
Bicarbonate (CaCO <sub>3</sub> ) -	1	1	453.2	1	507.1	1	479.6	1	433.1	1	I	1	1	1	1	1	1	1	1	1	365.4	1	1

						See	9# d					
			Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-1
Volatile Organic Compoun	l/gm) spr	:(										
Benzene	0.005	(2)	1	1	-	1		1	1	1	-	1
Toluene	0.750	(3)	!	1	1	1	:	1	1	-	-	1
Ethylbenzene	0.700	(2)	1	-	1	1	:	1	1	1		I
Xylene	0.620	(3)	1	1	1	1	1	1	1	1	1	1
MTBE	0.143	(4)	-	-	-	-	-	-	-		-	-
General Chemistry (mg/l):												
Fluoride	1.6	(3)	-	-				-	-	-		
Chloride	250	(3)	1	-	1	1	:	1	1	1	-	1
Nitrite	1.0	(2)	1	-	1	1	!	1	1	1	1	1
Bromide	•	ı	1	-	1	1	1	1	1	1		1
Nitrate	10	(3)	1	1	1	1	!	1	1	1	1	1
Phosphorus	ı	ı	1	1	1	1	1	1	1	ł	!	1
Sulfate	600	(3)	1	1	1	1	1	!	1	1	!	1
Carbon Dioxide (CO <sub>2</sub> )		ı	1	1	1	1	1	1	1	1	1	I
Alkalinity (CaCO <sub>3</sub> )		I.	1	ł	!	1	1	ł	1	1	1	ł
Bicarbonate (CaCO <sub>3</sub> )		1	-	1		1		1	-	-	1	1

Seep #9 J-17 Apr-17 Aug-16 Apr-16

Aug-17

œ

ł

ł ł

ł l

ł

ł

ł

ł ł

ł

ł

ł

ł ł ł ł ł

ł ł ł ł ł ł

> ł

1 ł ł ł ł

> ł ł

ł

ł

ł

ł ł 

ł ł I. ł

ł ł 

ł

ł

Vater	
-Tap V	
2017)	ĺ
(June	
evels	•
iing L	•

(2) EPA - Regional Screening Levels (June 2017) - MCL
(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less
(4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)
(5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds
(6) NMED groundwater screening level for unknown oil

- No screening level available

\*\*

1

Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
Analysis not required and/or well contains separate phase
Analytical result exceeds the respective screening level.
Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase

otes:	) EPA - Regional Scree	PA - Regional Scree	NMED WQCC stands	<ul> <li>INMED Tap Water Sci</li> </ul>	() EPA Screening Level
ž	Ē	5	3	4	(2)

### San Juan River Analytical Summary 2018 Groundwater Remediation and Monitoring Annual Report TABLE 10

Constituents						North of	MW-46							North of	f MW-45			
			Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Volatile Organic Compounds (I	mg/L):					-	-	-										
Benzene	0.005	(2)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.750	(3)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.700	(2)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.620	(3)	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
MTBE	0.143	(4)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<b>Total Petroleum Hydrocarbons</b>	: (mg/L):																	
Diesel Range Organics		•	<0.40	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.40	< 0.40	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Gasoline Range Organics		•	<0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Motor Oil Range Organics	•	•	<2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
General Chemistry (mg/L):																		
Fluoride	1.6	(3)	0.14	0.15	0.13	0.19	0.15	0.19	0.17	0.21	0.14	0.15	0.12	0.17	0.15	0.2	0.17	0.2
Chloride	250	(3)	2.5	m	2.9	4.4	2.7	3.5	2.9	3.8	2.7	2.8	2.8	3.5	2.7	3.3	2.9	3.8
Nitrite	1.0	(2)	<1.0	<1.0	< 0.10	< 1.0	< 1.0	< 1.0	< 0.10	< 0.10	<1.0	<1.0	< 0.10	< 1.0	< 1.0	< 1.0	< 0.10	< 0.10
Bromide	•	•	<0.10	<0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.10	<0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nitrate	10	(3)	<1.0	<1.0	0.074 J	< 1.0	< 1.0	< 1.0	< 0.10	< 0.10	<1.0	<1.0	< 0.10	< 1.0	< 1.0	< 1.0	< 0.10	< 0.10
Phosphorus	•	•	<0.50	<0.50 H	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<0.50	<0.50 H	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulfate	600	(3)	43	20	45	120	49	80	53	<b>3</b> 3	42	49	45	71	48	78	52	92
Carbon Dioxide (CO <sub>2</sub> )		•	ł	78	75	72	11	86	ł	I	ł	75 H	75	71	76	86	ł	ł
Alkalinity (CaCO <sub>3</sub> )	1	1	82.52	87.48	84.92	103.6	85	95	92	9.66	82.08	84.32	84.16	91.12	84.8	95.44	91	99.68
Total Dissolved Solids	1000	(3)	202	219	182	172	170	245	202	263	205	210	176	166	180	246	200	267
Electric Conductivity			309	340	280	260	280	380	310	405	314	320	280	260	280	380	300	411
Total Metals (mg/L):																		
Arsenic	0.01	(2)	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Barium	2.0	(2)	0.13	0.074	0.086	0.082	0.11	0.078	0.17	0.057	0.17	0.13	0.11	0.085	0.14	0.08	0.15	0.06
Cadmium	0.005	(2)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Chromium	0.05	(3)	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060
Lead	0.015	(2)	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0058	< 0.0050	< 0.0050	< 0.0050	0.0056	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Selenium	0.05	(3)	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Silver	0.05	(3)	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Mercury	0.002	(3)	< 0.00020 <	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Dissolved Metals (mg/L):						-	-		-									
Arsenic	0.01	(2)	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0010	< 0.0010	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0010	< 0.0010	< 0.020
Barium	1.0	(3)	0.065	0.057	0.071	0.067	0.086	0.074	0.074	0.062	0.065	0.055	0.069	0.07	0.082	0.073	0.072	0.056
Cadmium	0.005	(2)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Calcum		(	<b>.</b>	<b></b>	<b>.</b>	<b>6</b>	<b>34</b>	40	00000	<b>*</b>	00000	32	32	0000	<b>5</b>	<b>S</b>	<b></b>	<b>1</b>
Curomium	c0.0	(3)	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060
	0.0	0) (0)		0.0000	0014 1	0000	200000 V	00000	0.085	00000	~0.000	~0.000	0,0000	0000	<ul><li>0.0000</li><li>2.0</li></ul>	0000 ~	800	0000 0
	0.015	6) (0)	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.00050	< 0.00050	< 0.0050	<0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.00050	< 0.00050	< 0.0050
Magnesium		Ì	5.2	5.9	5.8	7.1	5.5	6.1	5.6	6.7	5.2	5.7	5.7	6.4	5.6	6.1	5.5	6.8
Manganese	0.2	(3)	0.0079	0.044	0.0091	0.098	0.032	0.010	0.009	0.011	0.0028	0.0065	0.008	0.019	0.033	0.011	0.0037	0.01
Potassium	•		1.7	1.7	1.9	2	2.2	1.9	2	2.2	1.7	1.8	1.8	2	2.3	1.8	2	2.2
Selenium	0.05	(3)	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.0010	< 0.0010	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.0010	< 0.0010	< 0.050
Silver	0.05	(3)	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Sodium	•		15	3	16	34	19	27	18	33	15	50	16	25	20	27	18	34
Uranium	0.03	(3)	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.00078	0.00067	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.00076	0.00066	< 0.10
Zinc	10	(3)	0.081	< 0.020	0.031	0.02	< 0.020	0.024	0.028	0.023	0.11	< 0.020	0.031	< 0.020	< 0.020	0.014	0.018	0.05

 Notes:
 (1) EPA - Regional Screening Levels (June 2017) - Tap Water
 (2) EPA - Regional Screening Levels (June 2017) - MCL

 (3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less
 (4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)

(5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds (6) NMED groundwater screening level for unknown oil

= No screening level available ı

= Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time \*

ł

 = Analysis not required and/or well contains separate phase
 = Analytical result exceeds the respective screening level.
 = Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase \*\*

### San Juan River Analytical Summary 2018 Groundwater Remediation and Monitoring Annual Report TABLE 10

Constituents			-			Upstr	eam				-	-		Downs	stream			
	,	A	ug-18 A	vpr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15	Aug-18	Apr-18	Aug-17	Apr-17	Aug-16	Apr-16	Aug-15	Apr-15
Volatile Organic Compounds (n	ng/L):																-	
Benzene	0.005	(2) <	0.001 <	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.750	(3) <	0.001 <	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	0.700	(2) <	0.001 <	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Xylenes	0.620	(3) <(	0.0015 <(	0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
MTBE	0.143	(4) <	0.001 <	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<b>Total Petroleum Hydrocarbons</b>	(mg/L):																	
Diesel Range Organics	•	•	<0.40	<0.40	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Gasoline Range Organics	•	v ı	0.050 <	0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Motor Oil Range Organics			<2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
General Chemistry (mg/L):																		
Fluoride	1.6	(3)	0.13	0.15	0.13	0.17	0.16	0.2	0.17	0.21	0.14	0.15	0.12	0.17	0.16	0.19	0.17	0.21
Chloride	250	(3)	2.5	2.8	3.4	3.5	2.7	3.3	°	4.3	2.5	2.9	2.8	3.7	2.7	3.4	°	3.9
Nitrite	1.0	(2)	<0.10	<1.0	< 0.10	< 1.0	< 1.0	< 1.0	< 0.10	< 0.10	<1.0	<1.0	< 0.10	< 1.0	< 1.0	< 1.0	< 0.10	< 0.10
Bromide	•	•	<0.10 <	<0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.10	<0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nitrate	10	(3)	<0.10	<1.0	0.18	< 1.0	< 1.0	< 1.0	< 0.10	< 0.10	<1.0	<1.0	0.082 J	< 1.0	< 1.0	< 1.0	< 0.10	< 0.10
Phosphorus	•	•	<0.50 <	<0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<0.50	<0.50 H	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulfate	600	(3)	43	20	46	73	49	75	54	110	44	58	45	80	49	84	54	100
Carbon Dioxide (CO <sub>2</sub> )		1	•	76	11	4	11	86	ł	ł	ł	H 77	75	72	11	87	ł	ł
Alkalinity (CaCO <sub>3</sub> )			32.16	84.2	85.68	91.24	86	95	91.56	99.56	82.04	86.16	84.52	33	86	97	92.12	102.6
Total Dissolved Solids	1000	(3)	294	235	181	167	178	240	204	232	196	200	186	172	184	254	196	279
Electric Conductivity	•		454	360	280	250	290	380	300	357	302	319	280	260	290	400	300	429
Total Metals (mg/L):																		
Arsenic	0.01	(2) <	0.020 <	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.02	< 0.020
Barium	2.0	(2)	0.16	0.079	0.099	0.079	0.11	0.08	0.16	0.061	0.11	0.078	0.091	0.078	0.12	0.082	0.130	0.058
Cadmium	0.005	(2) < (	0.0020 <	0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.002	< 0.0020
Chromium	0.05	(3) < (	09000 <	0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.0060	< 0.006	< 0.0060
Lead	0.015	(2) <	0.0050 <	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0059	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.005	< 0.0050
Selenium	0.05	(3) <	0.050 <	0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Silver	0.05	(3) <	0.0050 <	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.005	< 0.0050
Mercury	0.002	(3) < (	00020 < 0	.00020 <	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.0002	< 0.00020
Dissolved Metals (mg/L):											-							
Arsenic	0.01	(2)	0.020 <	0.020	< 0.020	< 0.020	< 0.020	< 0.0010	0.001	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0010	< 0.001	< 0.020
Barium	1.0	(3)	0.066	0.058	0.072	0.07	0.084	0.072	0.077	0.056	0.065	0.058	0.07	0.068	0.085	0.072	0.077	0.055
Cadmium	0.005	(2)	0.0020 <	0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.002	< 0.0020
Caldull		10/		2000					<b>.</b> .	<b>1</b>			<b>.</b>	0000	<b>t</b>		<b>5</b>	
Curomium	cn.n	(3) <		0.0000		< 0.0000	< 0.0000	< 0.0000	< 0.0000	< 0.0000	< 0.0060	< 0.0000	< 0.0000	<ul><li>0.0000</li><li>0.0000</li></ul>	< 0.0060	< 0.0060	< 0.006	< 0.0000
					0.0000										~ 0.0000	0.0000	000.0 >	
	0.015	(0)		0.0050		< 0.0050	~ 0 0050	~ 0 00050	~ 0 00050	0.020	~ 0.0050	~ 0.0050	0 0 0 V	~ 0.0050	02000 ~	05000 0 ~	0.0005	< 0.040
Magnesium		( )	5.3	5.7	5.9	6.4	5.5 2.5	5.9	5.4	7.1	< 0.0000	5.9	5.8	6.5	5.5	6.2	5.4	7.2
Manganese	0.2	(3)	.0022 0	.0074	0.0095	0.021	0.03	0.012	0.01	0.034	0.0041	0.016	0.012	0.029	0.032	0.029	0.011	0.062
Potassium			1.6	1.7	1.9	1.9	2.1	1.7	1.9	2.1	1.6	1.7	1.8	1.9	2.3	1.9	1.9	2.1
Selenium	0.05	(3) <	0.050 <	0.050	< 0.050	< 0.050	< 0.050	< 0.0010	< 0.0010	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.0010	< 0.001	< 0.050
Silver	0.05	(3) < (	0.0050 <	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.005	< 0.0050
Sodium	•		15	50	17	26	19	26	19	39	15	22	16	27	19	29	18	37
Uranium	0.03	< (3)	: 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.00076	0.00062	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.00084	0.0006	< 0.10
Zinc	10	(3)	.086 <	0.020	0.033	< 0.020	0.024	0.016	0.021	< 0.020	0.040	< 0.020	0.033	< 0.020	< 0.020	0.013	0.03	< 0.020

 Notes:
 (1) EPA - Regional Screening Levels (June 2017) - Tap Water
 (2) EPA - Regional Screening Levels (June 2017) - MCL

 (3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less
 (4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (March 2017)

(5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds (6) NMED groundwater screening level for unknown oil

= No screening level available ı

= Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time \*

ł

 = Analysis not required and/or well contains separate phase
 = Analytical result exceeds the respective screening level.
 = Columns hidden when there are 4 or more consecutive years recorded that analysis was not required and/or the well contained separate phase \*\*

			0	
2018	API Monthly Total Gallons	API Monthly Total BBIs	Injection well Total BBLs	Discharge to Evaporation Ponds Total BBLs
January	920,000	21,905	248	21,657
February	633,000	15,071	12,756	2,315
March	619,000	14,738	5,471	9,267
April	657,000	15,643	3,380	12,263
Мау	698,000	16,619	4,894	11,725
June	592,000	14,095	67	14,028
July	591,000	14,071	0	14,071
August	649,000	15,452	0	15,452
September	789,000	18,786	320	18,466
October	888,000	21,143	0	21,143
November	689,000	16,405	0	16,405
December	626,000	14,905	2,082	12,823

Table 11Wastewater Volumes2018 Groundwater Remediation Monitoring Annual Report

**BBLs** - barrels

169,615

### **Figures**



































### Appendix A

### 1.0 DATA VALIDATION INTRODUCTION

This summary presents data verification results for groundwater and surface water sampling activities conducted in 2018 at the Bloomfield Terminal pursuant to Section IV.A.2. of the July 2007 Consent Order (NMED, 2007) issued by the New Mexico Environment Department Hazardous Waste Bureau (NMED-HWB), and Section 2.F of Discharge Permit GW-001 (NMOCD, 2017) issued by the New Mexico Energy, Mineral, and Natural Resources Department Oil Conservation Division (EMNRD-OCD). The data review was performed in accordance with the procedures specified in the Order issued by NMED (NMED, 2007), USEPA Functional Guidelines for Organic and Inorganic Data Review, and quality assurance and control parameters set by the project laboratory Hall Environmental Analysis Laboratory, Inc. The samples evaluated include groundwater samples collected from monitoring wells installed at the Refinery Complex and North Boundary Barrier, a groundwater seep sample collected at the San Juan River bluff, and surface water samples collected from the San Juan River.

A total of 56 groundwater samples, one groundwater seep sample, four groundwater "outfall" samples, and 12 surface water samples (excluding QA samples) were collected in annual and semiannual monitoring events between April 18, 2018 and August 10, 2018. Groundwater samples, groundwater seep samples, outfall samples, and surface water samples were submitted to Hall Environmental Analysis Laboratory for the following parameters:

- Volatile organic compounds (VOCs) by USEPA Method 8260B;
- Semi-volatile organic compounds (SVOCs) by USEPA Method 8270C
- Gasoline, diesel, and motor oil range organics by SW-846 Method 8015B;
- Total metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and dissolved metals (arsenic, barium, cadmium, chromium, copper, iron, lead, magnesium, manganese, potassium, selenium, silver, sodium, uranium, and zinc) by SW846 Method 6010B/E200.7; and
- Mercury by EPA Method 7470.

Groundwater and surface water samples were also analyzed for general water quality parameters including, fluoride, chloride, nitrate, nitrite, bromide, phosphorous, sulfate, total carbon dioxide, total alkalinity, bicarbonate, total dissolved solids, and specific conductance.

Additionally, 22 quality assurance samples consisting of trip blanks, field blanks, equipment rinsate blanks, and field duplicates were collected and analyzed as part of the investigation activities. Table A-1 presents a summary of the field sample identifications, laboratory sample identifications, and sample collection dates.

Sample results were subject to a Level II data review that includes an evaluation of the following quality control (QC) parameters:

- Chain-of-Custody;
- Sample Preservation and Temperature Upon Laboratory Receipt
- Holding Times;
- Blank Contamination (method blanks, trip blanks, field blanks, and equipment rinsate blanks);
- Surrogate Recovery (for organic parameters);
- Laboratory Control Sample (LCS) Recovery and Relative Percent Difference (RPD);
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recovery and RPD;
- Duplicates (field duplicate, laboratory duplicate); and
- Other Applicable QC Parameters.

The data qualifiers used to qualify the analytical results associated with QC parameters outside of the established data quality objectives are defined below:

- J+ The analyte was positively identified; however, the result should be considered an estimated value with a potential high bias.
- J- The analyte was positively identified; however, the result should be considered an estimated value with a potential low bias.
- UJ The reporting limit for a constituent that was not detected is considered an estimated value.
- R Quality control indicates that the data is not usable.

Results qualified as "J+", "J-", or "UJ" are of acceptable data quality and may be used quantitatively to fulfill the objectives of the analytical program, per EPA guidelines.

Results for the performance monitoring events that required qualification based on the data verification are summarized in Table A-2.

### 2.1 CHAIN-OF-CUSTODY

The chain-of-custody documentation associated with project samples was found to be complete. Chain-of-custodies included sample identifications, date and time of collection, requested parameters, and relinquished/received signatures.

### 2.2 SAMPLE PRESERVATION AND TEMPERATURE UPON LABORATORY RECEIPT

Samples collected were received preserved and intact by Hall Environmental Laboratories, Inc. Samples were received by the laboratory at a temperature of 6.0 degrees Celsius or lower. Data qualification on lower temperature samples was not required.

### 2.3 HOLDING TIMES

All samples were extracted and analyzed within method-specified holding time limits with the exception of total carbon dioxide and phosphorus, both general water quality parameters. The recommended holding time for total carbon dioxide analysis is "immediate". Unless the sample is analyzed in the field it is flagged by the laboratory. The holding time for phosphorus is 48 hours. Since analyses were conducted in a reasonable time period after collection of samples and samples were properly preserved, the data was accepted but was flagged as estimated with a potential low bias. Data qualification for exceeding holding times is shown on Table A-2.

### 2.4 BLANK CONTAMINATION

### 2.4.1 Method Blank

Method blanks were analyzed at the appropriate frequency. Target compounds were not detected in the method blanks above target screening levels with the following exception:

Lab Report 1808248

• The constituent sulfate was detected in the method blank (Batch ID R53287) at a concentration of 1600 mg/L. The screening level for sulfate is 600 mg/L. Nine samples were qualified "J+" in Table A-2.

### 2.4.2 Trip Blank

Trip blanks were analyzed at the appropriate frequency as specified in the Order and Permit. Target compounds were not detected in the trip blanks with the following exceptions:

Lab Report 1808322-005 – The following data was flagged with "J" (Analyte detected below quantitation limit) Batch ID R53334.

- Naphthalene 1.2 ug/l vs screening level of 1.65 ug/l;
- 1-Methylnaphthalene 0.42 ug/l vs screening level of 11 ug/l; and
- 2-Methylnaphthalene 0.63 ug/l vs screening level of 36 ug/l.

These constituents were not detected in the method blank. The data was not qualified.

Lab Report 1808322-005 – The GRO result was flagged with a "J" (Analyte detected below quantitation limit) Batch ID A53492. GRO was present in the method blank and the sample was qualified "J+" in Table A-2.

Lab Report 1808540-005 – The GRO result was flagged with a "J" (Analyte detected below quantitation limit) Batch ID A53346. GRO was present in the method blank and the sample was qualified "J+" in Table A-2.

Lab Report 1808540-010 – The GRO result was flagged with a "J" (Analyte detected below quantitation limit) Batch ID A53346. GRO was present in the method blank and the sample was qualified "J+" in Table A-2.

Lab Report 1808649-007 – The GRO result was flagged with a "J" (Analyte detected below quantitation limit) Batch ID B53389. GRO was present in the method blank and the sample was qualified "J+" in Table A-2.

Lab Report 1808728-005 – In Batch ID Z53468 GRO was present in the method blank and the sample was qualified "J+" in Table A-2.

### 2.4.3 Field Blanks/Equipment Rinsate Blank

Field and equipment rinsate blanks were collected as specified in the Order and Permit. Target compounds were not detected in the field blanks or equipment blanks with the following exceptions:

Lab Report 1808439-002 (Field Blank #2)

- Total Carbon Dioxide 7.1 mg CO2/L. The data was flagged with "H" (Holding times for preparation or analysis exceeded). The results were qualified with "J-" in Table A-2; and
- Zinc 0.049 mg/L vs screening level of 10 mg/L. In Batch ID A53717 zinc was not detected in the method blank. Zinc was detected in LCS at a concentration of 0.50 mg/L. The results were qualified with "J+" in Table A-2.

Lab Report 1808439-008 (Equipment Blank)

• Total Carbon Dioxide – 9.8 mg CO2/I. The data was flagged with "H" (Holding times for preparation or analysis exceeded). The results were qualified with a "J-" in Table A-2;

Lab Report 1808649-002 (Field Blank #3)

• Toluene – 0.22 ug/l vs screening level of 750 ug/l. The data was flagged with a "J" (Analyte detected below quantitation limit). In Batch ID C53346 toluene was not detected in the method blank. The data was not qualified.

### 2.4.4 Common Laboratory Contaminants

Per USEPA guidelines, common laboratory contaminants for VOC analysis are acetone, 2-butanone (MEK), cyclohexane, chloromethane, and methylene chloride. Data qualification was not required since COCs were not detected in the method blanks.

### 2.4.5 Methanol Blanks

Methanol Blanks are not applicable and were not analyzed.

### 2.5 SURROGATE RECOVERY

Surrogate recoveries for the organic and inorganic analyses were performed at the required frequency and were within laboratory acceptance limits, with the following exceptions:

### Lab Report 1804A98-007

• Surrogate recovery for bromofluorobenzene (BFB) was above the upper acceptance limit for field sample OW 3+85 in Laboratory Batch ID G42469. The associated detected field sample results for gasoline range organics (GRO) are qualified "J+" due to a potential high bias.

Data qualification for surrogate recovery is shown on Table A-2.

### 2.6 LCS RECOVERY AND RELATIVE PERCENT DIFFERENCE

LCS/LCS duplicates were performed at the required frequency and were evaluated based on the following criteria:

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate, but the analyte was not detected in the associated batch, then data qualification was not required.
- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate and the analyte was detected in the associated batch, then the analyte results were qualified "J+" to account for a potential high bias.
- If the analyte recovery was below acceptance limits for LCS or LCS duplicate then the analyte results in the associated analytical batch were qualified ("UJ" for non-detects and "J-" for detected results) to account for a potential low bias.

LCS/LCSD percent recoveries and relative percent differences (RPDs) were within acceptance limits and no qualification was required.

### 2.7 MS/MSD RECOVERY AND RELATIVE PERCENT DIFFERENCE

MS/MSD samples were performed at the required frequency and were evaluated by the following criteria:

- If the MS or MSD recovery for an analyte was above acceptance limits but the analyte was not detected in the associated analytical batch, then data qualification was not required.
- If the MS or MSD recovery for an analyte was above acceptance limits and the analyte was detected in the associated analytical batch, then analyte results were qualified "J+" to account for a potential high bias.
- Low MS/MSD recoveries for inorganic parameters result in sample qualification of the associated analytical batch with a "J-".
- Results were not qualified based on non-project specific MS/MSD (i.e., batch QC) recoveries.

Some lab reports do not report MS/MSD results if none of the samples included under that report were used for the MS/MSD; however, in many instances the sample used for the MS/MSD was a sample of similar matrix materials submitted by Western in a different data set and its MS/MSD results were included in other lab reports, which are included in this data validation review. Western Refining Southwest, Inc. Bloomfield Terminal Annual Report January 2019 MS/MSD percent recoveries and RPDs were within acceptance limits and no qualification was required with one exception for diesel range organics:

### Lab Report 1808248

• The MS recovery for DRO was below the acceptable range; however, the MSD recovery was within range and demonstrates the analyses can produce usable results.

### 2.8 DUPLICATES

### 2.8.1 Field Duplicates

Field duplicates were collected at a rate as stated in the Order and Permit. The RPDs between the field duplicate and its associated sample were calculated and are presented in Table A-3. The field duplicates were evaluated by the following criteria:

- If an analyte was detected at a concentration greater than five times the method reporting limit, the RPD should be less than 25 percent for ground water samples.
- If an analyte was detected at a concentration that is less than five times the method reporting limit, then the difference between the sample and the field duplicate should not exceed the method reporting limit.
- Duplicate RPDs are calculated by dividing the difference of the concentrations by the average of the concentrations.

Field duplicate RPDs were within acceptance limits except for the following:

Lab Reports 1804A7701 (CW 0+60) and 180A7702 (CW 0+60 DUP) - Diesel Range Organics concentrations of 1.2 mg/L vs 0.92 mg/L in the duplicate sample. The RPD was 26.4 %.

Lab Reports 1808248011 (MW-59) and 1808248014 (DUPLICATE #1) – Sodium concentrations of 430 mg/L vs 180 mg/L in the duplicate sample. The RPD was 82%.

Lab Reports 1808540001 (MW-64) and 1808540009 (DUPLICATE #2)

- Bromide concentrations of 2.5 mg/L vs 3.4 mg/L in the duplicate sample. The RPD was 30.5%;
- Barium concentrations of 0.29 mg/L vs 0.22 mg/L in the duplicate sample. The RPD was 27.5%;
- Iron concentrations of 0.057 mg/L vs 0.031 mg/L in the duplicate sample. The RPD was 59.1%.

### 3.0 COMPLETENESS SUMMARY

The following equation was used to calculate the technical completeness:

% Technical Completeness =  $\left(\frac{Number \ of \ usable \ results}{Number \ of \ reported \ results}\right) x100$ 

The technical completeness attained for Annual and Semi-Annual monitoring activities conducted in 2018 was 100 percent. The completeness results are provided in Table A-4. The analytical results for the required analytes per the Order and Permit were considered usable for the intended purposes and the project DQOs have been met.

### Table A-1

### Sample Identification - 2018 Annual Monitoring Report Western Refining Southwest, Inc. - Bloomfield Terminal

Sample ID	Lab ID	Date Collected	Sample Type
MW-13	1804a74-001a	04/18/18	GW
CW 0+60	1804a77-001a	04/18/18	GW
CW 0+60 DUP	1804a77-002a	04/18/18	FD
MW-35	1804a80-001a	04/18/18	GW
Trip Blank	1804a80-002a	04/18/18	ТВ
MW-52	1804a81-001a	04/18/18	GW
MW-1	1804a83-001a	04/18/18	GW
MW-38	1804a98-001a	04/19/18	GW
MW-37	1804a98-002a	04/19/18	GW
MW-12	1804a98-003a	04/19/18	GW
Rinsate Blank	1804a98-004a	04/19/18	EB
Field Blank	1804a98-005a	04/19/18	FB
Trip Blank	1804a98-006a	04/19/18	ТВ
OW 3+85	1804a98-007a	04/19/18	GW
OW 25+70	1804a98-008a	04/19/18	GW
OW 22+00	1804b65-001a	04/20/18	GW
CW 25+95	1804b65-002a	04/20/18	GW
TRIP BLANK	1804b65-003a	04/20/18	ТВ
Outfall #2	1804b65-004a	04/20/18	GW
Outfall #3	1804b65-005a	04/20/18	GW
Upstream	1804b65-006a	04/20/18	SW
North of 46	1804b65-007a	04/20/18	SW
Downstream	1804b65-008a	04/20/18	SW
North of 45	1804b65-009a	04/20/18	SW
Seep 1	1805C34-001A	05/22/18	GW
Upstream	1808248-001a	08/02/18	SW
North of MW#45	1808248-002a	08/02/18	SW
North of MW#46	1808248-003a	08/02/18	SW
Downstream	1808248-004a	08/02/18	SW
Trip Blank	1808248-005a	08/02/18	ТВ
MW-68	1808248-006a	08/03/18	GW
MW-51	1808248-007a	08/03/18	GW
MW-67	1808248-008a	08/03/18	GW
MW-53	1808248-009a	08/03/18	GW
Trip Blank	1808248-010a	08/03/18	ТВ
MW-59	1808248-011a	08/03/18	GW
FIELD BLANK #1	1808248-012a	08/03/18	FB
DUPLICATE #1	1808248-013a	08/03/18	FD
Trip Blank	1808248-014a	08/03/18	ТВ
MW-1	1808322-001a	08/06/18	GW
MW-13	1808322-002a	08/06/18	GW
MW-34	1808322-003a	08/06/18	GW
MW-11	1808322-004a	08/06/18	GW
Trip Blank	1808322-005a	08/06/18	ТВ
MW-32	1808439-001a	08/07/18	GW
Field Blank #2	1808439-002a	08/07/18	FB
MW-27	1808439-003a	08/07/18	GW

### Table A-1Sample Identification - 2018 Annual Monitoring ReportWestern Refining Southwest, Inc. - Bloomfield Terminal

Sample ID	Lab ID	Date Collected	Sample Type
MW-38	1808439-004a	08/07/18	GW
Trip Blank	1808439-005a	08/07/18	TB
MW-37	1808439-006a	08/07/18	GW
MW-35	1808439-007a	08/07/18	GW
Equipment Blank	1808439-008a	08/07/18	EB
MW-12	1808439-009a	08/07/18	GW
MW-64	1808540-001a	08/08/18	GW
MW-63	1808540-002a	08/08/18	GW
MW-31	1808540-003a	08/08/18	GW
MW-62	1808540-004a	08/08/18	GW
Trip Blank	1808540-005a	08/08/18	TB
MW-65	1808540-006a	08/08/18	GW
MW-70	1808540-007a	08/08/18	GW
MW-44	1808540-008a	08/08/18	GW
DUPLICATE #2	1808540-009a	08/08/18	FD
Trip Blank	1808540-010a	08/08/18	TB
MW-52	1808649-001a	08/08/18	GW
MW-29	1808649-002a	08/08/18	GW
CW 0+60	1808649-003a	08/09/18	GW
FIELD BLANK #3	1808649-004a	08/09/18	FB
OW 25+70	1808649-005a	08/09/18	GW
DUPLICATE #3	1808649-006a	08/09/18	FD
Trip Blank	1808649-007a	08/09/18	TB
East Outfall #3	1808728-001a	08/09/18	GW
East Outfall #2	1808728-002a	08/10/18	GW
OW 23+10	1808728-003a	08/10/18	GW
CW 25+95	1808728-004a	08/10/18	GW
Trip Blank	1808728-005a	08/10/18	TB

Notes:

GW = Groundwater

FD = Field Duplicate

SW = Surface Water

TB = Trip Blank EB = Equipment Blank FB = Field Blank

# Table A-2 Monitoring Report Qualified Data - 2018 Annual Monitoring Report Western Refining Southwest, Inc. - Bloomfield Terminal

SAMPLE ID	DATE COLLECTED	ANALYTE	RESULTS	UNITS	SAMPLE TYPE	QUALIFIER	COMMENTS
OW 3+85	04/19/18	Gasoline Range Organics	3.7	mg/L	GW	<del>,</del>	Qualified high bias - high recovery in surrogate.
Outfall #2	04/20/18	Total Carbon Dioxide	330	mg CO2/L	GW	-	Qualified low bias - analysis outside holding time.
Outfall #3	04/20/18	Total Carbon Dioxide	300	mg CO2/L	GW	-Ĺ	Qualified low bias - analysis outside holding time.
Upstream	04/20/18	Total Carbon Dioxide	76	mg CO2/L	SW	-L	Qualified low bias - analysis outside holding time.
Upstream	04/20/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	SW	Ŋ	Qualified low bias - analysis outside holding time.
North of 46	04/20/18	Total Carbon Dioxide	78	mg CO2/L	SW	-L	Qualified low bias - analysis outside holding time.
North of 46	04/20/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	SW	Ŋ	Qualified low bias - analysis outside holding time.
Downstream	04/20/18	Total Carbon Dioxide	77	mg CO2/L	SW	-ل	Qualified low bias - analysis outside holding time.
Downstream	04/20/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	SW	Ŋ	Qualified low bias - analysis outside holding time.
North of 45	04/20/18	Total Carbon Dioxide	75	mg CO2/L	SW	-L	Qualified low bias - analysis outside holding time.
North of 45	04/20/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	SW	ſŊ	Qualified low bias - analysis outside holding time.
Seep 1	05/22/18	Total Carbon Dioxide	430	mg CO2/L	GW	-ل	Qualified low bias - analysis outside holding time.
Upstream	08/02/18	Sulfate	43	mg/L	SW	+ſ	Qualified high bias - detection of sulfate in method blank
North of MW#45	08/02/18	Sulfate	42	mg/L	SW	)+	Qualified high bias - detection of sulfate in method blank
North of MW#46	08/02/18	Sulfate	43	mg/L	SW	J+	Qualified high bias - detection of sulfate in method blank
Downstream	08/02/18	Sulfate	44	mg/L	SW	J+	Qualified high bias - detection of sulfate in method blank
MW-68	08/03/18	Sulfate	200	mg/L	GW	J+	Qualified high bias - detection of sulfate in method blank
MW-68	08/03/18	Total Carbon Dioxide	250	mg CO2/L	GW	_ل	Qualified low bias - analysis outside holding time.
MW-51	08/03/18	Sulfate	12	mg/L	GW	J+	Qualified high bias - detection of sulfate in method blank
MW-51	08/03/18	Total Carbon Dioxide	230	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-67	08/03/18	Sulfate	240	mg/L	GW	J+	Qualified high bias - detection of sulfate in method blank
MW-67	08/03/18	Total Carbon Dioxide	330	mg CO2/L	GW	-ل	Qualified low bias - analysis outside holding time.
MW-53	08/03/18	Total Carbon Dioxide	330	mg CO2/L	GW	_ل	Qualified low bias - analysis outside holding time.
MW-59	08/03/18	Sulfate	180	mg/L	GW	J+	Qualified high bias - detection of sulfate in method blank
MW-59	08/03/18	Total Carbon Dioxide	1000	mg CO2/L	GW	-Ĺ	Qualified low bias - analysis outside holding time.

Page 3 of 16

# Table A-2 Oualified Data - 2018 Annual Monitoring Report Western Refining Southwest, Inc. - Bloomfield Terminal

SAMPLE ID	DATE COLLECTED	ANALYTE	RESULTS	UNITS	SAMPLE TYPE	QUALIFIER	COMMENTS
FIELD BLANK #1	08/03/18	Total Carbon Dioxide	9.9	mg CO2/L	FB	J-	Qualified low bias - analysis outside holding time.
DUPLICATE #1	08/03/18	Sulfate	180	mg/L	GW	J+	Qualified high bias - detection of sulfate in method blank
DUPLICATE #1	08/03/18	Total Carbon Dioxide	066	mg CO2/L	FD	J-	Qualified low bias - analysis outside holding time.
T-WM	08/06/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	GW	ſŊ	Qualified low bias - analysis outside holding time.
T-WM	08/06/18	Total Carbon Dioxide	320	mg co2/L	GW	-ل	Qualified low bias - analysis outside holding time.
MW-13	08/06/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	GW	IJ	Qualified low bias - analysis outside holding time.
MW-13	08/06/18	Total Carbon Dioxide	890	mg CO2/L	GW	-	Qualified low bias - analysis outside holding time.
MW-34	08/06/18	Total Carbon Dioxide	870	mg co2/L	GW	-ل	Qualified low bias - analysis outside holding time.
MW-11	08/06/18	Total Carbon Dioxide	006	mg CO2/L	GW	-	Qualified low bias - analysis outside holding time.
Trip Blank	08/06/18	Gasoline Range Organics	0.026	mg/L	GW	J+	Qualified high bias - GRO detected in the method blank
MW-32	08/07/18	Phosphorus, Orthophosphate (As P)	< 10	mg/L	GW	IJ	Qualified low bias - analysis outside holding time.
MW-32	08/07/18	Total Carbon Dioxide	170	mg CO2/L	GW	-L	Qualified low bias - analysis outside holding time.
Field Blank #2	08/07/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	FB	Ŋ	Qualified low bias - analysis outside holding time.
Field Blank #2	08/07/18	Total Carbon Dioxide	7.1	mg CO2/L	FB	J-	Qualified low bias - analysis outside holding time.
Field Blank #2	08/07/18	Zinc	0.049	mg/L	FB	J+	Qualified high bias - Zinc detected in the LCS
MW-27	08/07/18	Phosphorus, Orthophosphate (As P)	< 10	mg/L	GW	IJ	Qualified low bias - analysis outside holding time.
MW-27	08/07/18	Total Carbon Dioxide	260	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-38	08/07/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	GW	IJ	Qualified low bias - analysis outside holding time.
MW-38	08/07/18	Total Carbon Dioxide	630	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-37	08/07/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	GW	IJ	Qualified low bias - analysis outside holding time.
MW-37	08/07/18	Total Carbon Dioxide	640	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-35	08/07/18	Phosphorus, Orthophosphate (As P)	< 2.5	mg∕L	GW	ſŊ	Qualified low bias - analysis outside holding time.
MW-35	08/07/18	Total Carbon Dioxide	940	mg CO2/L	GW	-L	Qualified low bias - analysis outside holding time.
Equipment Blank	08/07/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	EB	ſŊ	Qualified low bias - analysis outside holding time.
Equipment Blank	08/07/18	Total Carbon Dioxide	9.8	mg CO2/L	EB	-L	Qualified low bias - analysis outside holding time.
MW-12	08/07/18	Phosphorus, Orthophosphate (As P)	< 0.50	mg/L	GW	IJ	Qualified low bias - analysis outside holding time.
MW-12	08/07/18	Total Carbon Dioxide	140	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-64	08/08/18	Total Carbon Dioxide	270	mg CO2/L	GW	-L	Qualified low bias - analysis outside holding time.
MW-63	08/08/18	Total Carbon Dioxide	610	mg CO2/L	GW	-L	Qualified low bias - analysis outside holding time.
MW-31	08/08/18	Total Carbon Dioxide	1100	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.

## Table A-2 Qualified Data - 2018 Annual Monitoring Report Western Refining Southwest, Inc. - Bloomfield Terminal

MW-62         08/08/18         Tr         Trip Blank         08/08/18         G           Trip Blank         08/08/18         G		NESOLIS	2110	TYPE	QUALIFIER	COMMENTS
Trip Blank         08/08/18         G           Trip Blank         08/08/18         G	Total Carbon Dioxide	600	mg C02/L	GW	-	Qualified low bias - analysis outside holding time.
Trip Blank 08/08/18 G	Gasoline Range Organics	0.037	mg/L	GW	+	Qualified high bias - GRO detected in the method blank
	Gasoline Range Organics	0.038	mg/L	GW	+	Qualified high bias - GRO detected in the method blank
MW-65 08/08/18 T	Total Carbon Dioxide	1200	mg CO2/L	GW	-ر	Qualified low bias - analysis outside holding time.
MW-70 08/08/18 Ti	Total Carbon Dioxide	190	mg CO2/L	GW	-ر	Qualified low bias - analysis outside holding time.
MW-44 08/08/18 T	Total Carbon Dioxide	350	mg CO2/L	GW	-	Qualified low bias - analysis outside holding time.
DUPLICATE #2 08/08/18 Ti	Total Carbon Dioxide	260	mg CO2/L	FD	-	Qualified low bias - analysis outside holding time.
MW-52 08/08/18 P	Phosphorus, Orthophosphate (As P)	1.6	mg/L	GW	-	Qualified low bias - analysis outside holding time.
MW-52 08/08/18 Ti	Total Carbon Dioxide	200	mg CO2/L	GW	-Ĺ	Qualified low bias - analysis outside holding time.
MW-29 08/08/18 P	Phosphorus, Orthophosphate (As P)	1.4	mg/L	GW	-	Qualified low bias - analysis outside holding time.
MW-29 08/08/18 Ti	Total Carbon Dioxide	280	mg CO2/L	GW	-	Qualified low bias - analysis outside holding time.
Trip Blank 08/09/18 G	Gasoline Range Organics	0.043	mg/L	GW	+	Qualified high bias - GRO detected in the method blank
East Outfall #3 08/09/18 P	Phosphorus, Orthophosphate (As P)	0.33	mg/L	GW	-	Qualified low bias - analysis outside holding time.
East Outfall #3 08/09/18 Ti	Total Carbon Dioxide	86	mg CO2/L	GW	-	Qualified low bias - analysis outside holding time.
East Outfall #2 08/10/18 P	Phosphorus, Orthophosphate (As P)	0.64	mg/L	GW	-ر	Qualified low bias - analysis outside holding time.
East Outfall #2 08/10/18 Ti	Total Carbon Dioxide	210	mg CO2/L	GW	-	Qualified low bias - analysis outside holding time.
Trip Blank 08/10/18 G	Gasoline Range Organics	0.074	mg/L	GW	+	Qualified high bias - GRO detected in the method blank

Notes: J- = Low bias GW = Groundwater SW = Surface Water F

s TB = Trip Blank FB = Field Blank

UJ - analyte was not detected, but results may be biased low FD = Field Duplicate EB = Equipment Blank

### Table A-3 Field Duplicate Summary - 2018 Annual Monitoring Report Western Refining Southwest, Inc. - Bloomfield Terminal

	CW 0+60	CW 0+60 DUP			
Parameter	1804A7701	1804A7702			
Farameter	4/18/2018	4/18/2018			
	Sample Result	Field Duplicate			
Volatile Organic Compounds (ug/L)		•	•		
1,1,1,2-Tetrachloroethane			NC		
1,1,1-Trichloroethane			NC		
1,1,2,2-Tetrachloroethane			NC		
1,1,2-Trichloroethane			NC		
1,1-Dichloroethane			NC		
1,1-Dichloroethene			NC		
1,1-Dichloropropene			NC		
1,2,3-Trichlorobenzene			NC		
1,2,3-Trichloropropane			NC		
1,2,4-Trichlorobenzene			NC		
1,2,4-Trimethylbenzene			NC		
1,2-Dibromo-3-chloropropane			NC		
1.2-Dibromoethane (EDB)			NC		
1.2-Dichlorobenzene			NC		
1.2-Dichloroethane (EDC)			NC		
1 2-Dichloropropane			NC		
1 3 5-Trimethylbenzene			NC		
1 3-Dichlorobenzene			NC		
1.3-Dichloropropane			NC		
1 4-Dichlorobenzene			NC		
1-Methylnanbthalene			NC		
2 2-Dichloropropane			NC		
2,2 Dichlorophopane			NC		
2-Chlorotoluene			NC		
2 Onorotoidene 2-Hexanone			NC		
2-Methylnanbthalene			NC		
			NC		
4-Isopropyltoluene			NC		
4-Methyl-2-pentanone			NC		
			NC		
Benzene	1.2	1.2	0.0		
Bromobenzene		1.2	NC		
Bromodichloromethane			NC		
Bromoform			NC		
Bromomothano			NC		
			NC		
			NC		
			NC		
Chloroothono			NC		
Chloroform			NC		
Chloremethene			NC		
			NC		
CIS-1,2-DCE			NC		
			NC		
Dibromocniorometnane			NC		
Dipromometnane			NC		
Dichlorodifluoromethane			NC 7.0		
Ethylbenzene	3.1	4	/.ð		
Hexachlorobutadiene			NC		
Isopropylbenzene			NC		
Methyl tert-butyl ether (MTBE)	<1.0	< 1.0	NC		
Methylene Chloride			NC		
Naphthalene			NC		
n-Butylbenzene			NC		
n-Propylbenzene			NC		
sec-Butylbenzene			NC		
Styrene			NC		
tert-Butylbenzene			NC		
Tetrachloroethene (PCE)			NC		
	CW 0+60	CW 0+60 DUP			
-----------------------------------	---------------	-----------------	--------	--	--
Demonstern T	1804A7701	1804A7702			
Parameter	4/18/2018	4/18/2018	RPD %		
Ē	Sample Result	Field Duplicate			
Toluene	< 1.0	< 1.0	NC		
trans-1,2-DCE			NC		
trans-1,3-Dichloropropene			NC		
Trichloroethene (TCE)			NC		
Trichlorofluoromethane			NC		
Vinyl chloride			NC		
Xylenes, Total	1.5	1.6	6.5		
General Chemistry (mg/l):			•		
Fluoride			NC		
Chloride			NC		
Nitrite			NC		
Bromide			NC		
Nitrate			NC		
Phosphorus			NC		
Sulfate			NC		
Carbon Dioxide (CO <sub>2</sub> )			NC		
Alkalinity (CaCO <sub>2</sub> )			NC		
Bicarbonate (CaCO.)			NC		
			NC		
Total Metals (Ing/I).			NO		
Alsenic			NC		
Ballulli			NC		
Cauliluiti			NC		
			NC		
Leau			NC		
Seleriluiti			NC		
Morouny			NC		
Dissolved Metals (mg/l)			NC		
Dissolved Metals (Ing/1).			NC		
Arsenic			NC		
Ballulli			NC		
Cauliluiti			NC		
Calcium			NC		
Conpor			NC		
Copper			NC		
			NC		
Leau			NC		
Magnesium			NC NC		
Manganese			NC NC		
Polassium			NC NC		
Seleriium			NC NC		
Silver					
Sodium			INC NC		
			INC NO		
Zinc NC					
Discol Dense Offer	4.0	0.00	00.4		
	1.2	0.92	20.4		
IVIOTOR UII Range Organics	<2.5	<2.5	NC		

#### Notes:

RPD = Relative percent difference; [(difference)/(average)]\* 100

NC = Not calculated; RPD values were not calculated for non-detects or J-flagged data

ug/L = micrograms per liter

mg/L = milligrams per liter

--- = not analyzed

	MW-59	DUPLICATE #1	
Parameter	1808248011	1808248014	RPD %
i didilicitei	8/3/2018	8/3/2018	
	Sample Result	Field Duplicate	
Volatile Organic Compounds (ug/L)			
1,1,1,2-Tetrachloroethane			NC
1,1,1-Trichloroethane			NC
1,1,2,2-Tetrachloroethane			NC
1,1,2-Trichloroethane			NC
1,1-Dichloroethane			NC
1,1-Dichloroethene			NC
1,1-Dichloropropene			NC
1,2,3-Trichlorobenzene			NC
1,2,3-i richloropropane			NC
1,2,4-Trichlorobenzene			NC
1,2,4-Trimetnyibenzene			NC
1,2-Dibromo-3-chioropropane			NC
1,2-Dibromoethane (EDB)			NC
1.2-Dichlorobenzene			NC NO
1,2-Dichloroethane (EDC)			NC
1,2-Dichloropropane			NC
			NC
1,3-Dichlorobenzene			NC
1,3-Dichloropropane			NC
1,4-Dichloroberizerie			NC
			NC
2,2-Dichloropropane			
2-Butanone			NC
2-Chlorotoluerie			NC
			NC
			NC
			NC
4 Notbyl 2 pontanono			NC
4-Methyl-2-peritatione			NC
Acetorie			
Benzene	23	23	0.0
Bromodichloromothano			NC
Bromoform			NC
Bromomothano			NC
Carbon disulfido			NC
			NC
Chlorobenzene			NC
Chloroethane			NC
Chloroform			NC
Chloromothano			NC
			NC
cis-1 3-Dichloropropene			NC
Dibromochloromothano			NC
Dibromomethane			NC
Dichlorodifluoromethano			NC
Ethylbonzona	76	80	51
Hevenhlorobutediono			NC
leonronylbenzene			NC
Methyl tert-hutyl ether (MTRE)	1400	1400	0.0
Methylene Chloride			NC
Nanhthalono			NC
n Rutyborzona			NC
n-Dronylbenzono			NC
			NC
Sec-Dutyibenzene			

	MW-59	DUPLICATE #1	
<b>D</b> .	1808248011	1808248014	
Parameter	8/3/2018	8/3/2018	- RPD %
	Sample Result	Field Duplicate	
Styrene			NC
tert-Butylbenzene			NC
Tetrachloroethene (PCE)			NC
Toluene	< 1.0	< 1.0	NC
trans-1.2-DCE			NC
trans-1.3-Dichloropropene			NC
Trichloroethene (TCE)			NC
Trichlorofluoromethane			NC
Vinyl chloride			NC
Xylenes, Total	< 1.5	< 1.5	NC
Semi-Volatile Organic Compounds (ug	:/L)		
1,2,4-Trichlorobenzene	< 10	< 10	NC
1,2-Dichlorobenzene	< 10	< 10	NC
1,3-Dichlorobenzene	< 10	< 10	NC
1,4-Dichlorobenzene	< 10	< 10	NC
1-Methylnaphthalene	< 10	< 10	NC
2,4,5-Trichlorophenol	< 10	< 10	NC
2,4,6-Trichlorophenol	< 10	< 10	NC
2,4-Dichlorophenol	< 20	< 20	NC
2,4-Dimethylphenol	< 10	< 10	NC
2,4-Dinitrophenol	< 20	< 20	NC
2,4-Dinitrotoluene	< 10	< 10	NC
2,6-Dinitrotoluene	< 10	< 10	NC
2-Chloronaphthalene	< 10	< 10	NC
2-Chlorophenol	< 10	< 10	NC
2-Methylnaphthalene	< 10	< 10	NC
2-Methylphenol	< 10	< 10	NC
2-Nitroaniline	< 10	< 10	NC
2-Nitrophenol	< 10	< 10	NC
3+4-Methylphenol	< 10	< 10	NC
3,3 <sup>°</sup> -Dichlorobenzidine	< 10	< 10	NC
3-Nitroaniline	< 10	< 10	NC
4,6-Dinitro-2-methylphenol	< 20	< 20	NC
4-Bromophenyl phenyl ether	< 10	< 10	NC
4-Chloro-3-methylphenol	< 10	< 10	NC
4-Chloroaniline	< 10	< 10	NC
4-Chlorophenyl phenyl ether	< 10	< 10	NC
4-Nitroaniline	< 10	< 10	NC
4-Nitrophenol	< 10	< 10	NC
Acenaphthene	< 10	< 10	NC
Acenaphthylene	< 10	< 10	NC
Aniline	< 10	< 10	NC
Anthracene	< 10	< 10	NC
Azobenzene	< 10	< 10	NC
Benz(a)anthracene	< 10	< 10	NC
Benzo(a)pyrene	< 10	< 10	NC
Benzo(b)fluoranthene	< 10	< 10	NC
Benzo(g,h,i)perylene	< 10	< 10	NC
Benzo(k)fluoranthene	< 10	< 10	NC
Benzoic acid	< 20	< 20	NC
Benzyl alcohol	< 10	< 10	NC
Bis(2-chloroethoxy)methane	< 10	< 10	NC
Bis(2-chloroethyl)ether	< 10	< 10	NC
Bis(2-chloroisopropyl)ether	< 10	< 10	NC
Bis(2-ethylhexyl)phthalate	< 10	< 10	NC
Butyl benzyl phthalate	< 10	< 10	NC
Carbazole	< 10	< 10	NC
Chrysene	< 10	< 10	NC

	MW-59	DUPLICATE #1	
Bananatan	1808248011	1808248014	
Parameter	8/3/2018	8/3/2018	RPD %
	Sample Result	Field Duplicate	
Di-n-butyl phthalate	< 10	< 10	NC
Di-n-octyl phthalate	< 10	< 10	NC
Dibenz(a,h)anthracene	< 10	< 10	NC
Dibenzofuran	< 10	< 10	NC
Diethyl phthalate	< 10	< 10	NC
Dimethyl phthalate	< 10	< 10	NC
Fluoranthene	< 10	< 10	NC
Fluorene	< 10	< 10	NC
Hexachlorobenzene	< 10	< 10	NC
Hexachlorobutadiene	< 10	< 10	NC
Hexachlorocyclopentadiene	< 10	< 10	NC
Hexachloroethane	< 10	< 10	NC
Indeno(1,2,3-cd)pyrene	< 10	< 10	NC
Isophorone	< 10	< 10	NC
N-Nitrosodi-n-propylamine	< 10	< 10	NC
N-Nitrosodimethylamine	< 10	< 10	NC
N-Nitrosodiphenylamine	< 10	< 10	NC
Naphthalene	< 10	< 10	NC
Nitrobenzene	< 10	< 10	NC
Pentachlorophenol	< 20	< 20	NC
Phenanthrene	< 10	< 10	NC
Phenol	< 10	< 10	NC
Pyrene	< 10	< 10	NC
Pvridine	< 10	< 10	NC
General Chemistry (mg/l)	. 10	10	110
Fluoride	< 0.10	< 0.10	NC
Chloride	190	190	0.0
Nitrite	< 1.0	< 1.0	NC.
Bromide	31	31	0.0
Nitrate	< 1.0	< 1.0	NC
Phosphorus	< 0.50	< 0.50	NC
Sulfate	180	180	0.0
	1000	100	1.0
	1000	990	1.0
	1050	1052	0.2
Bicarbonate (CaCO <sub>3</sub> )	1050	1052	0.2
Total Metals (mg/l):			
Arsenic	< 0.020	< 0.0050	NC
Barium	0.12	0.12	0.0
Cadmium	< 0.0020	< 0.0020	NC
Chromium	< 0.0060	< 0.0060	NC
Lead	< 0.0050	< 0.020	NC
Selenium	< 0.050	< 0.0050	NC
Silver	< 0.0050	< 0.050	NC
Mercury	< 0.00020	< 0.00020	NC
Dissolved Metals (mg/l):			-
Arsenic	< 0.020	1.6	NC
Barium	0.12	0.12	0.0
Cadmium	< 0.0020	< 0.0020	NC
Calcium	170	< 0.020	NC
Chromium	< 0.0060	< 0.0060	NC
Copper	< 0.0060	< 0.0060	NC
Iron	7.5	7.4	1.3
Lead	0.0090	0.011	20.0
Magnesium	50	50	0.0
Manganese	1.5	< 0.10	NC
Potassium	3.0	2.9	3.4

	MW-59	DUPLICATE #1	
Deveneter	1808248011	1808248014	
Farailleter	8/3/2018	8/3/2018	RFU 70
	Sample Result	Field Duplicate	
Selenium	0.11	0.10	9.5
Silver	< 0.0050	< 0.0050	NC
Sodium	430	180	82.0
Uranium	< 0.10	420	NC
Zinc	< 0.020	< 0.020	NC
Total Petroleum Hydrocarbons (mg/l):			
Diesel Range Organics	< 0.40	< 0.40	NC
Gasoline Range Organics	2.3	2.4	4.3
Motor Oil Range Organics	< 2.5	< 2.5	NC

#### Notes:

RPD = Relative percent difference; [(difference)/(average)]\* 100

NC = Not calculated; RPD values were not calculated for non-detects or J-flagged data

ug/L = micrograms per liter

mg/L = milligrams per liter

--- = not analyzed

	MW-64	DUPLICATE #2	
Demonster	1808540001	1808540009	
Parameter	8/8/2018	8/8/2018	RPD %
	Sample Result	Field Duplicate	1
Volatile Organic Compounds (ug/L)	• • • • • •		L
1.1.1.2-Tetrachloroethane	< 1.0	< 1.0	NC
1 1 1-Trichloroethane	< 1.0	< 1.0	NC
1 1 2 2-Tetrachloroethane	< 2.0	< 2.0	NC
1 1 2-Trichloroethane	< 1.0	< 1.0	NC
1 1-Dichloroethane	< 1.0	< 1.0	NC
1 1-Dichloroethene	< 1.0	< 1.0	NC
	< 1.0	< 1.0	NC
	< 1.0	< 1.0	NC
	< 2.0	< 2.0	NC
	< 2.0	< 2.0	NC
	< 1.0	< 1.0	NC
	< 1.0	< 1.0	NC
1,2-Dibromo-3-chioropropane	< 2.0	< 2.0	NC
1,2-Dibromoetnane (EDB)	< 1.0	< 1.0	NC
1,2-Dichlorobenzene	< 1.0	< 1.0	NC
1,2-Dichloroethane (EDC)	< 1.0	< 1.0	NC
1,2-Dichloropropane	< 1.0	< 1.0	NC
1,3,5-Trimethylbenzene	< 1.0	< 1.0	NC
1,3-Dichlorobenzene	< 1.0	< 1.0	NC
1,3-Dichloropropane	< 1.0	< 1.0	NC
1,4-Dichlorobenzene	< 1.0	< 1.0	NC
1-Methylnaphthalene	< 4.0	< 4.0	NC
2,2-Dichloropropane	< 2.0	< 2.0	NC
2-Butanone	< 10	< 10	NC
2-Chlorotoluene	< 1.0	< 1.0	NC
2-Hexanone	< 10	< 10	NC
2-Methylnaphthalene	< 4.0	< 4.0	NC
4-Chlorotoluene	< 1.0	< 1.0	NC
4-Isopropyltoluene	< 1.0	< 1.0	NC
4-Methyl-2-pentanone	< 10	< 10	NC
Acetone	< 10	< 10	NC
Benzene	< 1.0	< 1.0	NC
Bromobenzene	< 1.0	< 1.0	NC
Bromodichloromethane	< 1.0	< 1.0	NC
Bromoform	< 1.0	< 1.0	NC
Bromomethane	< 3.0	< 3.0	NC
Carbon disulfide	< 10	< 10	NC
Carbon Tetrachloride	< 1.0	< 1.0	NC
Chlorobenzene	< 1.0	< 1.0	NC
Chloroethane	< 2.0	< 2.0	NC
Chloroform	< 1.0	< 1.0	NC
Chloromethane	< 3.0	< 3.0	NC
cis-1 2-DCF	< 1.0	< 1.0	NC
cis-1 3-Dichloropropene	< 1.0	< 1.0	NC
Dibromochloromethane	< 1.0	< 1.0	NC
Dibromomothano	< 1.0	< 1.0	NC
Dishlorodifluoromothana	< 1.0	< 1.0	NC
	> 1.0	> 1.0	
Eurypenzene	< 1.0 < 1.0	> 1.0	
	> 1.0	> 1.0	
Isopropyibenzene	< 1.U	5 1.0 2 4 0	
Mathedaya Oblast	< 1.0	< 1.U	
	< 3.0	< 3.0	
Naphthalene	< 3.0	< 3.0	NC
n-Butylbenzene	< 1.0	< 1.0	NC
n-Propylbenzene	< 2.0	< 2.0	NC
sec-Butylbenzene	< 1.0	< 1.0	NC

	MW-64	DUPLICATE #2	
Deveneter	1808540001	1808540009	
Parameter	8/8/2018	8/8/2018	RPD %
	Sample Result	Field Duplicate	
Styrene	< 1.0	< 1.0	NC
tert-Butylbenzene	< 1.0	< 1.0	NC
Tetrachloroethene (PCE)	< 1.0	< 1.0	NC
Toluene	< 1.0	< 1.0	NC
trans-1,2-DCE	< 1.0	< 1.0	NC
trans-1,3-Dichloropropene	< 1.0	< 1.0	NC
Trichloroethene (TCE)	< 1.0	< 1.0	NC
Trichlorofluoromethane	< 1.0	< 1.0	NC
Vinyl chloride	< 1.0	< 1.0	NC
Xylenes, Total	< 1.5	< 1.5	NC
General Chemistry (mg/l):			
Fluoride	< 2.0	< 0.50	NC
Chloride	840	820	2.4
Nitrite	< 2.0	< 2.0	NC
Bromide	2.5	3.4	30.5
Nitrate	52	51	1.9
Phosphorus	< 10	< 10	NC
Sulfate	1500	1500	0.0
Carbon Dioxide ( $CO_2$ )	270	260	3.8
Alkalinity (CaCO <sub>3</sub> )	275.2	278.7	1.3
Bicarbonate (CaCO <sub>2</sub> )	275.2	278.7	13
Total Metals (mg/l):	210.2	210.1	1.5
Arsonic	< 0.020	< 0.020	NC
Barium	0.020	0.020	27.5
Cadmium	< 0.0020	< 0.0020	NC.
Chromium	0.0097	0.0086	12.0
Lead	< 0.0050	< 0.0050	NC.
Selenium	< 0.050	< 0.050	NC
Silver	0.0081	0.010	21.0
Mercury	< 0.00020	< 0.0020	NC.
Dissolved Metals (mg/l):	0.00020	0.00020	NO
Arsonic	< 0.020	< 0.020	NC
Barium	< 0.020	< 0.020	NC
Cadmium	< 0.020	< 0.020	NC
Calcium	450	440	22
Chromium	< 0.0060	< 0.0060	NC
Copper	< 0.0000	< 0.0060	NC
Iron	0.057	0.031	59.1
beal	< 0.0050	< 0.0050	NC
Magnesium	< 0.0000 66	68	3.0
Magnesium	< 0.0020	< 0.0020	NC
Marcury	< 0.0020	< 0.0020	NC
Potaccium	<u>4</u> 5	4.6	22
Salanium	 < 0.050	< 0.050	NC
Scientum	0.012	0.013	80
Silver	2.012 200	7/0	7 8
	< 0.10	< 0.10	NC
Zino	< 0.10	< 0.10	NC
Total Petroleum Hydrocarbone (mg/)	<ul><li>&gt; 0.0∠0</li></ul>	~ 0.020	NO
Diesel Rande Ordanies	< 0.050	< 0.050	NC
Casolina Rando Ordanios	< 0.000	< 0.000	NC
Motor Oil Pango Organico	<u> </u>	< 0.40	NC
	N 2.0	N 2.0	INC

#### Notes:

RPD = Relative percent difference; [(difference)/(average)]\* 100

NC = Not calculated; RPD values were not calculated for non-detects or J-flagged data

ug/L = micrograms per liter

mg/L = milligrams per liter

--- = not analyzed

	CW 0+60	DUPLICATE #3	
Devenetor	1808649003	1808649006	
Parameter	8/9/2018	8/9/2018	RPD %
	Sample Result	Field Duplicate	
Volatile Organic Compounds (ug/L)			1
1,1,1,2-Tetrachloroethane			NC
1,1,1-Trichloroethane			NC
1,1,2,2-Tetrachloroethane			NC
1,1,2-Trichloroethane			NC
1.1-Dichloroethane			NC
1.1-Dichloroethene			NC
1.1-Dichloropropene			NC
1 2 3-Trichlorobenzene			NC
1.2.3-Trichloropropane			NC
1 2 4-Trichlorobenzene			NC
1 2 4-Trimethylbenzene			NC
1 2-Dibromo-3-chloropropane			NC
1 2-Dibromoethane (EDB)			NC
1.2-Dichlorobenzene			NC
1.2-Dichloroethane (EDC)			NC
			NC
1.2 Dichlorophopane			NC
			NC
			NC
			NC
1,4-Dichiorobenzene			NC NC
			INC NO
2,2-Dichloropropane			INC NO
2-Butanone			INC NO
2-Chlorotoluene			NC
2-Hexanone			INC NO
2-Methylhaphthalene			INC NC
4-Chiorotoluene			INC NO
4-isopropyitoluene			NC NC
4-Methyl-2-pentanone			NC
Acetone			NC
Benzene	< 1.0	< 1.0	NC
Bromobenzene			NC
Bromodichloromethane			NC
Bromoform			NC
Bromomethane			NC
Carbon disulfide			NC
Carbon Tetrachloride			NC
Chlorobenzene			NC
Chloroethane			NC
Chloroform			NC
Chloromethane			NC
cis-1,2-DCE			NC
cis-1,3-Dichloropropene			NC
Dibromochloromethane			NC
Dibromomethane			NC
Dichlorodifluoromethane			NC
Ethylbenzene	1.8	1.6	11.8
Hexachlorobutadiene			NC
lsopropylbenzene			NC
Methyl tert-butyl ether (MTBE)	< 1.0	< 1.0	NC
Methylene Chloride			NC
Naphthalene			NC
n-Butylbenzene			NC
n-Propylbenzene			NC

	CW 0+60	DUPLICATE #3			
Devenetor	1808649003	1808649006	00 0V		
Parameter	8/9/2018	8/9/2018	RPD %		
	Sample Result	Field Duplicate			
sec-Butylbenzene			NC		
Styrene			NC		
tert-Butvlbenzene			NC		
Tetrachloroethene (PCE)			NC		
Toluene	< 1.0	< 1.0	NC		
trans-1 2-DCF			NC		
trans-1.3-Dichloropropene			NC		
Trichloroethene (TCE)			NC		
Trichlorofluoromethane			NC		
Vinyl chloride			NC		
Xvlenes Total	< 1.5	< 1.5	NC		
General Chemistry (mg/l):	× 1.5	\$ 1.5	NO		
General Chemistry (mg/1).			NC		
Chloride			NC		
Ciliolide			NC		
Nitrite			NC		
Bromide			NC		
Nitrate			NC		
Phosphorus			NC		
Sulfate			NC		
Carbon Dioxide (CO <sub>2</sub> )			NC		
Alkalinity (CaCO <sub>3</sub> )			NC		
Bicarbonate (CaCO <sub>3</sub> )			NC		
Total Metals (mg/l):					
Arsenic			NC		
Barium			NC		
Cadmium			NC		
Chromium			NC		
Lead			NC		
Selenium			NC		
Silver			NC		
Mercury			NC		
Dissolved Metals (mg/l):					
Arsenic			NC		
Barium			NC		
Cadmium			NC		
Calcium			NC		
Chromium			NC		
Copper			NC		
Iron			NC		
l ead			NC		
Magnesium			NC		
Magnesium			NC		
Potassium			NC		
Selenium			NC		
Silver			NC		
Silver			NC		
Jronium					
ZIIIC NC					
	~ 0.40	< 0.40	NO		
	< 0.40	< 0.40			
wotor Oil Range Organics	<2.5	< <u>2.</u> 3	INC		

#### Notes:

RPD = Relative percent difference; [(difference)/(average)]\* 100

NC = Not calculated; RPD values were not calculated for non-detects or J-flagged data

ug/L = micrograms per liter

mg/L = milligrams per liter

--- = not analyzed

# Table A-4Technical Completeness Summary - 2018 Annual Monitoring ReportWestern Refining Southwest, Inc. - Bloomfield Terminal

	Parameter	Total Number of Results	Number of Usable Results	Percent Technical Compliance
TPH (mg/L):	Diesel Range Organics (DRO)	51	51	100
	Motor Oil Range Organics (MRO)	50	50	100
	Gasoline Range Organics (GRO)	45	45	100
VOCs (mg/L):	All VOC Analytes	22	22	100
VOCs (mg/L):	BTEX & MTBE only	39	39	100
SVOCs (mg/L):	All SVOC Analytes	9	9	100
Total Recoverable	Arsenic	37	37	100
Metals (mg/L):	Barium	37	37	100
	Cadmium	37	37	100
	Chromium	37	37	100
	Lead	37	37	100
	Selenium	37	37	100
	Silver	37	37	100
Dissolved Metals (mg/L):	Arsenic	37	37	100
	Barium	37	37	100
	Cadmium	37	37	100
	Calcium	37	37	100
	Chromium	37	37	100
	Copper	37	37	100
	Iron	37	37	100
	Lead	37	37	100
	Magnesium	37	37	100
	Manganese	37	37	100
	Mercury	37	37	100
	Potassium	37	37	100
	Selenium	37	37	100
	Silver	37	37	100
	Sodium	37	37	100
	Uranium	37	37	100
	Zinc	37	37	100
Other Parameters:	Bicarbonate (As CaCO3)	38	38	100
	Bromide	37	37	100
	Carbonate (As CaCO3)	38	38	100
	Chloride	37	37	100
	Fluoride	37	37	100
	Nitrate+Nitrite as N	31	31	100
	Nitrogen, Nitrate (As N)	9	9	100
	Nitrogen, Nitrite (As N)	9	9	100
	Phosphorus, Orthophosphate (As P)	37	37	100
	Sulfate	37	37	100
	Total Alkalinity (as CaCO3)	38	38	100
	Total Carbon Dioxide	38	38	100

Notes:

Number of samples used in completeness calculations includes field duplicates, equipment rinsate, and field blanks.

Percent Technial Compliance = (Number of usable results / Number of reported results) \* 100



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

April 24, 2018

Allen Hains Andeavor 50 CR 4990 Bloomfield, NM 87413 TEL: (505) 801-5616 FAX (505) 632-3911

RE: Cross Gradient Wells 4 18 18

OrderNo.: 1804A74

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/19/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1804A74 Date Reported: 4/24/2018

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor

**Project:** Cross Gradient Wells 4 18 18

Client Sample ID: MW-13 Collection Date: 4/18/2018 10:50:00 AM IS Received Date: 4/19/2018 7:15:00 AM

Lab ID: 1804A74-001	latrix:	AQUEOUS	Received	Date: 4/19/20	18 7:15:00 AM
Analyses Re	sult	PQL Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIS	ST				Analyst: AG
Benzene	ND	1.0	µg/L	1	4/20/2018 2:01:53 PM
Toluene	ND	1.0	µg/L	1	4/20/2018 2:01:53 PM
Ethylbenzene	ND	1.0	µg/L	1	4/20/2018 2:01:53 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/20/2018 2:01:53 PM
Xylenes, Total	ND	1.5	µg/L	1	4/20/2018 2:01:53 PM
Surr: 4-Bromofluorobenzene	114	70-130	%Rec	1	4/20/2018 2:01:53 PM
Surr: Toluene-d8	103	70-130	%Rec	1	4/20/2018 2:01:53 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 2
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Page 2 of 2

#### Client: Andeavor

Project: Cross Gradient Wells 4 18 18

Sample ID 100ng lcs	cs SampType: LCS4 TestCode: EPA Method 8260: Volatiles Short List									
Client ID: BatchQC	Batch	n ID: R5	0722	F	RunNo: 5	0722				
Prep Date:	Analysis D	ate: 4/	20/2018	S	SeqNo: 1	646068	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.6	80	120			
Toluene	21	1.0	20.00	0	104	80	120			
Ethylbenzene	21	1.0	20.00	0	104	80	120			
Methyl tert-butyl ether (MTBE)	18	1.0	20.00	0	91.3	80	120			
Xylenes, Total	62	1.5	60.00	0	104	80	120			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			
Sample ID <b>rb</b>	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8260: Volatile	es Short L	.ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b>	SampT Batch	iype: ME n ID: R5	3LK 0722	Tes F	tCode: E RunNo: 5	PA Method 0722	8260: Volatile	es Short L	ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date:	SampT Batch Analysis D	ÿpe: <b>ME</b> n ID: <b>R5</b> 9ate: <b>4/</b> 2	3LK 0722 20/2018	Tes F S	tCode: E RunNo: 5 SeqNo: 1	PA Method 0722 646080	8260: Volatile Units: μg/L	es Short L	ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date: Analyte	SampT Batch Analysis D Result	ype: <b>ME</b> ID: <b>R5</b> Pate: <b>4</b> / PQL	BLK 0722 20/2018 SPK value	Tes F S SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	<b>8260: Volatile</b> Units: μg/L HighLimit	es Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene	SampT Batch Analysis D Result ND	ype: <b>ME</b> n ID: <b>R5</b> Pate: <b>4</b> / PQL 1.0	BLK 0722 20/2018 SPK value	Tes F S SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit	es Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene	SampT Batch Analysis D Result ND ND	ype: <b>ME</b> n ID: <b>R5</b> vate: <b>4/</b> PQL 1.0 1.0	BLK 0722 20/2018 SPK value	Tes F S SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	8260: Volatile Units: µg/L HighLimit	s Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene	SampT Batch Analysis D Result ND ND ND	ype: <b>ME</b> n ID: <b>R5</b> Pate: <b>4/</b> PQL 1.0 1.0 1.0	BLK 0722 20/2018 SPK value	Tes F S SPK Ref Val	tCode: E RunNo: 5 GeqNo: 1 %REC	PA Method 0722 646080 LowLimit	8260: Volatile Units: µg/L HighLimit	%RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE)	SampT Batch Analysis D Result ND ND ND ND	ype: <b>ME</b> DID: <b>R5</b> Date: <b>4</b> /2 1.0 1.0 1.0 1.0 1.0	8LK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit	%RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE) Xylenes, Total	SampT Batch Analysis D Result ND ND ND ND ND	ype: <b>ME</b> bate: <b>4</b> / PQL 1.0 1.0 1.0 1.0 1.0 1.0	8LK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit	%RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE) Xylenes, Total Surr: 4-Bromofluorobenzene	SampT Batch Analysis D Result ND ND ND ND ND ND	ype: <b>ME</b> bate: <b>4</b> / PQL 1.0 1.0 1.0 1.0 1.0 1.5	BLK 0722 20/2018 SPK value 10.00	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC 113	PA Method 0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit 130	%RPD	<b>.ist</b> RPDLimit	Qual

#### **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
- PQL Practical Quanitative Limit
- 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

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

### Sample Log-In Check List

Client Name: ANDEAVOR BLOOMFIEL. Work Order Numb	er: 1804A74	RcptNo: 1
Received By: Isaiah Ortiz 4/19/2018 7:15:00 A	M	Iat
Completed By: Michelle Garcia 4/19/2018 4:04:06 F	M	Muhall
Reviewed By: Two Lilig 173		più più
LB:ENM		
Chain of Custody		
1. Is Chain of Custody complete?	Yes 🔽	No 🗌 Not Present 🗌
2. How was the sample delivered?	<u>Courier</u>	
	· · · · · ·	
<u>LOG IN</u> 3 Was an attempt made to cool the samples?		
of the an atomptimate to cool the samples?		
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🗹	No 🗍 NA 🗌
5. Sample(s) in proper container(s)?	Yes 🔽	No 🗌
6. Sufficient sample volume for indicated test(s)?	Yes 🗹	No
7 Are samples (except VOA and ONG) properly preserved?	Yes 🗹	
8. Was preservative added to bottles?	Yes	No 🗹 NA 🗌
9. VOA vials have zero headspace?	Yes 🔽	No 🗌 No VOA Vials 🗌
10. Were any sample containers received broken?	Yes	
11 5		bottles checked
(Note discrepancies on chain of custody)	Yes 🗹	No i for pH:
12. Are matrices correctly identified on Chain of Custody?	Yes 🔽	No Asjusteds
13. Is it clear what analyses were requested?	Yes 🔽	
14. Were all holding times able to be met?	Yes 🗹	No Checked by:
(if no, notity customer for authorization.)		
Special Handling (if applicable)		
15. Was client notified of all discrepancies with this order?	Yes	No 🗌 NA 🗹
Person Notified: Date		
By Whom: Via:	🗌 eMail 🔲 f	Phone 🔲 Fax 🔲 In Person
Regarding:		
Client Instructions:		
16. Additional remarks:		
17. <u>Cooler Information</u> <u>Cooler No</u> Temp °C Condition Seal Intact Seal No 1 0.4 Good Yes	Seal Date	Signed By

L M		14	RY Y							(N	or 1	Y)	səlddu8 1	∀									alytes.		
(	۱ ۲	FZ		) !				_							┣								et An		
, ,		Ï	2		7109	22		_															arge		
ľ		Z		E	IM 8.	5-410	L.		(AOV-im98) 0728			:8									Τρι				
			₹	ital.c	⊿ ne'⊃	346	sənt	Λju	18E ol	N 'X	ЭТЕ	a (A	OV) 8092	8 ×									s ai		
			S	men	nerqi	505	Rec	s	5 bCB	808	:/s	əpi	oites¶ 180	8									thod		
		ź	I S	viror	Ibnql	Fax	lysis	†)	'OS'*O	1 <sup>,2</sup> 0	N <sup>'€</sup> (	DN'I	O,∃) anoin	∀	<u> </u>								Met		
		ш		allen	۲	5	Ana		(		5	elste	SRA 8 Me	<u>ы</u>		_				 			tical		
•			Ş	h.w	s NE	-397			(SM		728	3 10	AH (8310		<u> </u>								lalyt		
		Ì		¦ ≶	wkins	-345					202		DB (Metho			_							e Ar		
		_	1 =		1 Ha	505		(Ĉ	NMK0	אם/	оя ОЯ	י (פ								 			Š		
		<b>.</b>			490	Tel.		۸)	UO SE	э) н	IdT	+38		- я	<u> </u>	_				 			arks:		
									(1208)	s'8	MT	+38	TEX+MTE	8			1				 	 	Remé		
	Γ									Τ		_													1
				Vells								F) 0. (	- No. N	<u>-</u>									Time	-uS	
, T				ent V		, ut		6				<u>a (c</u>	HEA	L L									Date 1. L.C.	l 22	s
(				adie	Ð	Ш		lains		leu	Ž	0	( 	7									- <u>-</u> -	19	
			Sush	อี่	00   	Inal		Huế		Pay		0	ative										-		
		ë		ros	-	-Anr	9			acv	Yes	ature:	serva Type	H H									<u> </u>		
	į	dTin	Ð	ie: C	7	emi	:326	ager		Ē	þ	npera	- E	- LO						 			-		1
		Vroun	andar	t Nan		t#: S	1262	t Man		er:		e Ten	ainer and #	VOA									d by: 1, , , ,		
		nrn-⊿	X St	rojec	ate:	rojec	#Ö	rojec		ampl	n Ice	ampl	Cont												
		Ē		<u>a</u>		<u> </u>		n P		<u>່</u> ທ		ျ လ		4			+			 			<u>8</u> /	<u>ka</u> )	
		<u></u>	hal					r.coi	datio				st IC												ç
		00	Ē			113		avo	Valio				ənbə	33											3
	Ĺ	202	L Te			874		ude	(Full				e Re	Š										ļ ģ	{
		2	field		0	NN	33	5@A	vel 4				mple												
		20	Mo		499(	eld,	-148	lain:	K Le				Sa										Ξ.Γ		
	Ċ	۲ د	¥.		CR	omfi	-534	n.S.I			Ы		rix	0	$\vdash$		+			 	 	-	Lished 1	uished	5
1	4	<b>¦</b>	Vor		× 50	Blo	915	Alle			Ĕ		Mat	H									Relind		₽
$\bigcirc$		Jain	Andea		Address			Fax#:	ackage: lard		Type)_		Time	050									ime: 415	ime:	
	Č	כ	Client:		Mailing		Phone #	email or	QA/QC P. □ Stand	Other	X EDD (		Date	Vie la									Jate: 1 (B/(G   1	Date: 1 //s//	

#### TABLE 2

#### Analytical Methods and Target Analytes Facility-Wide Groundwater Monitoring Plan - June 2017 Western Refining Southwest, Inc. - Bloomfield Refinery

VOCs (EPA Method 8260B) <sup>(1)</sup>	Total Recoverable Metals (E)	PA Method 6010B/7470)
- Target List	- Target List (not applicable to	River Terrace Sampling Events)
Benzene	Arsenic	Lead
Toluene	Barium	Mercurv
Ethylbenzene	Cadmium	Selenium
Xylenes	Chromium	Silver
Methyl tert butyl ether (MTBE)	- Target List (for River Terrace	Sampling Events Only)
SVOCs - (EPA Method 8270)	Lead	
- Method List	Mercury (DW-1 ON	/LY)
TPH-GRO (EPA Method 8015B)		/
- Gasoline Range Organics	<b>Dissolved Metals (EPA Methe</b>	od 6010B / 7470)
TPH-DRO (EPA Method 8015B)	- Target List (for Refinery Con	nplex, Outfalls, and River)
- Diesel Range Organics	Arsenic	Manganese
- Motor Oil Range Organics	Barium	Mercury
Total Carbon Dioxide (Laboratory Calculated)	Cadmium	Potassium
- Dissolved CO2	Calcium	Selenium
Specific Conductivity (EPA Method 120.1 or field measurement)	Chromium	Silver
- Specific conductance	Copper	Sodium
TDS (EPA Method 160.1 or field measurement)	Iron	Uranium
- Total dissolved solids	Lead	Zinc
General Chemistry - Anions (EPA Method 300.0)	Magnesium	
Fluoride		
Chloride		
Bromide	TPH = total petroleum hydroca	rbons
Nitrogen, Nitrite (as N)	GRO = gasoline range organics	
Nitrogen, Nitrate (as N)	VOCs = volatile organic compo	ounds
Phosphorous, Orthophosphate (As P)	DRO = diesel range organics	
Sulfate	TDS = total dissolved solids	
General Chemistry - Alkalinity (EPA Method 310.1)		
Alkalinity, Total		
Carbonate		
Bicarbonate		

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 Piezomenter Wells only, per the River Terrace Bioventing System Monitoring Plan.

Western Refining Southwest, Inc. Bloomfield Refinery



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

April 24, 2018

Allen Hains Andeavor 50 CR 4990 Bloomfield, NM 87413 TEL: (505) 801-5616 FAX

RE: NBB Collection Wells

OrderNo.: 1804A77

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/19/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1804A77 Date Reported: 4/24/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor

**Project:** NBB Collection Wells

Client Sample ID: CW 0+60 Collection Date: 4/18/2018 3:40:00 PM

Lab ID: 1804A77-001	Matrix:	AQUEOUS	Received I	Date: 4/19/20	018 7:15:00 AM
Analyses	Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE					Analyst: TOM
Diesel Range Organics (DRO)	1.2	0.40	mg/L	1	4/23/2018 4:49:03 PM
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/23/2018 4:49:03 PM
Surr: DNOP	108	79.2-146	%Rec	1	4/23/2018 4:49:03 PM
EPA METHOD 8260: VOLATILES SHOR	T LIST				Analyst: AG
Benzene	1.2	1.0	µg/L	1	4/20/2018 11:26:27 AM
Toluene	ND	1.0	µg/L	1	4/20/2018 11:26:27 AM
Ethylbenzene	3.7	1.0	µg/L	1	4/20/2018 11:26:27 AM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/20/2018 11:26:27 AM
Xylenes, Total	1.5	1.5	µg/L	1	4/20/2018 11:26:27 AM
Surr: 4-Bromofluorobenzene	115	70-130	%Rec	1	4/20/2018 11:26:27 AM
Surr: Toluene-d8	102	70-130	%Rec	1	4/20/2018 11:26:27 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 5
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report Lab Order 1804A77 Date Reported: 4/24/2018

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor

**Project:** NBB Collection Wells

#### Client Sample ID: CW 0+60 DUP Collection Date: 4/18/2018 3:40:00 PM Received Date: 4/19/2018 7:15:00 AM

Lab ID: 1804A77-002	Matrix:	AQUEOUS	Received I	Date: 4/19/20	018 7:15:00 AM
Analyses	Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE					Analyst: TOM
Diesel Range Organics (DRO)	0.92	0.40	mg/L	1	4/23/2018 6:00:33 PM
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/23/2018 6:00:33 PM
Surr: DNOP	109	79.2-146	%Rec	1	4/23/2018 6:00:33 PM
EPA METHOD 8260: VOLATILES SHORT	<b>LIST</b>				Analyst: AG
Benzene	1.2	1.0	µg/L	1	4/20/2018 11:03:17 AM
Toluene	ND	1.0	µg/L	1	4/20/2018 11:03:17 AM
Ethylbenzene	4.0	1.0	µg/L	1	4/20/2018 11:03:17 AM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/20/2018 11:03:17 AM
Xylenes, Total	1.6	1.5	µg/L	1	4/20/2018 11:03:17 AM
Surr: 4-Bromofluorobenzene	117	70-130	%Rec	1	4/20/2018 11:03:17 AM
Surr: Toluene-d8	102	70-130	%Rec	1	4/20/2018 11:03:17 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 5
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Client: Project:	Andeavor	lection We	115								
	NBB COL		115								
Sample ID	1804A77-001BMS	SampTy	/pe: <b>M</b> \$	5	Tes	tCode: El	PA Method	8015D: Diese	l Range		
Client ID:	CW 0+60	Batch	ID: 37	746	F	RunNo: 5	0757				
Prep Date:	4/23/2018	Analysis Da	ate: 4/	/23/2018	5	SeqNo: 1	647215	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	4.0	0.40	2.500	1.171	114	89.6	145			
Surr: DNOP		0.26		0.2500		104	79.2	146			
Sample ID	1804A77-001BMS	D SampTy	/pe: <b>M</b> \$	SD	Tes	tCode: El	PA Method	8015D: Diese	I Range		
Client ID:	CW 0+60	Batch	ID: 37	746	F	RunNo: 5	0757				
Prep Date:	4/23/2018	Analysis Da	ate: 4/	/23/2018	S	SeqNo: 1	647216	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	4.1	0.40	2.500	1.171	118	89.6	145	1.92	20	
Surr: DNOP		0.27		0.2500		109	79.2	146	0	0	
Sample ID	LCS-37746	SampTy	pe: LC	s	Tes	tCode: El	PA Method	8015D: Diese	I Range		
Client ID:	LCSW	Batch	ID: 37	746	F	RunNo: 5	0757				
Prep Date:	4/23/2018	Analysis Da	ate: 4/	/23/2018	S	SeqNo: 1	647226	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	2.8	0.40	2.500	0	111	76.5	158			
Surr: DNOP		0.25		0.2500		100	79.2	146			
Sample ID	MB-37746	SampTy	vpe: M	BLK	Tes	tCode: El	PA Method	8015D: Diese	I Range		
Client ID:	PBW	Batch	ID: 37	746	F	RunNo: 5	0757				
Prep Date:	4/23/2018	Analysis Da	ate: 4/	/23/2018	5	SeqNo: 1	647227	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	ND	0.40								
Motor Oil Rang	ge Organics (MRO)	ND	2.5								
Surr: DNOP		0.55		0.5000		110	79.2	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
- PQL Practical Quanitative Limit
- 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

Page 3 of 5

WO#: 1804A77

24-Apr-18

Client:AndeavoProject:NBB Co	or llection W	ells								
Sample ID 100ng lcs	Samp	Гуре: <b>LC</b>	:S4	Tes	stCode: E	PA Method	8260: Volatil	es Short L	ist	
Client ID: BatchQC	Batc	h ID: R5	0722	F	RunNo: 5	0722				
Prep Date:	Analysis [	Date: 4/	20/2018	:	SeqNo: 1	646068	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.6	80	120			
Toluene	21	1.0	20.00	0	104	80	120			
Ethylbenzene	21	1.0	20.00	0	104	80	120			
Methyl tert-butyl ether (MTBE)	18	1.0	20.00	0	91.3	80	120			
Xylenes, Total	62	1.5	60.00	0	104	80	120			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			
Sample ID 1804a77-002ams	Samp	Гуре: М	S4	Tes	stCode: E	PA Method	8260: Volatil	es Short L	.ist	
Client ID: CW 0+60 DUP	Batc	h ID: R5	0722	F	RunNo: 5	0722				
Prep Date:         Analysis Date:         4/20/2018         SeqNo::         1646074         Units:         µg/L										
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	1.214	87.7	80	120			
Toluene	20	1.0	20.00	0.1426	97.5	80	120			
Ethylbenzene	23	1.0	20.00	4.050	96.1	80	120			
Methyl tert-butyl ether (MTBE)	21	1.0	20.00	0.4660	101	80	120			
Xylenes, Total	59	1.5	60.00	1.639	94.8	80	120			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.7	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			
Sample ID 1804a77-002ams	d Samp1	Гуре: М	SD4	Tes	stCode: E	PA Method	8260: Volatile	es Short L	_ist	
Client ID: CW 0+60 DUP	Batc	h ID: R5	0722	F	RunNo: 5	0722				
Prep Date:	Analysis E	Date: 4	20/2018	:	SeqNo: 1	646075	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	1.214	87.9	80	120	0.161	20	
Toluene	20	1.0	20.00	0.1426	99.1	80	120	1.62	20	
Ethylbenzene	24	1.0	20.00	4.050	99.8	80	120	3.12	20	
Methyl tert-butyl ether (MTBE)	23	1.0	20.00	0.4660	115	80	120	12.3	20	
Xylenes, Total	60	1.5	60.00	1.639	98.0	80	120	3.20	20	
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130	0	0	
Surr: Toluene-d8	10		10.00		103	70	130	0	0	
Sample ID rb	Samp	Гуре: М	BLK	Tes	stCode: E	PA Method	8260: Volatil	es Short L	ist	
Client ID: PBW	Batc	h ID: R5	0722	F	RunNo: 5	0722				
Prep Date:	Analysis [	Date: 4/	20/2018	:	SeqNo: 1	646080	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Qualifiers: * Value exceeds Maximum O	Contaminant	Level.		B Analvte	e detected i	n the associa	ted Method Bla	nk		

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

Analyte detected in the associated Method Blank В

Е Value above quantitation range

J Analyte detected below quantitation limits

Sample pH Not In Range Р

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified Page 4 of 5

WO#: 1804A77 24-Apr-18

Client:	Andeavor										
Project:	NBB Coll	ection We	ells								
Sample ID rb		SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260: Volatile	es Short L	.ist	
Client ID: PBW		Batch	n ID: R5	0722	F	RunNo: 5	0722				
Prep Date:		Analysis D	ate: 4/	20/2018	5	SeqNo: 1	646080	Units: µg/L			
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 (MT	BE)	ND	1.0								
Xylenes, Total		ND	1.5								
Surr: 4-Bromofluoroben:	zene	11		10.00		113	70	130			
Surr: Toluene-d8		9.8		10.00		98.5	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
- PQL Practical Quanitative Limit
- 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

#### Page 5 of 5

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental . Albu TEL: 505-345-3975 Website: www.hai	Analysis Laboratory 4901 Hawkins NE querque, NM 87109 FAX: 505-345-4107 Ilenvironmental.com	Sam	iple Log-In C	heck List	
Client Name: ANDEAVOR BLOOMFIEL	Work Order Number:	1804A77		RcptNo:	1	-
		8 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -				
Received By: Isaiah Ortiz	4/19/2018 7:15:00 AM	-	I	***		and the second s
Completed By: Michelle Garcia	4/19/2018 4:05:10 PM		Minu Go	nua		
Reviewed By: Ind c LB:ENM	( 19)					
Chain of Custody						
1. Is Chain of Custody complete?		Yes 🔽	No 🗌	Not Present		ni na seconda
2. How was the sample delivered?		<u>Courier</u>				
	an a					
<b>Log In</b> 3. Was an attempt made to cool the samples?		Yes 🗹	No 🗌	NA 🗌		
4. Were all samples received at a temperature of	>0° C to 6.0°C	Yes 🗹	No 🗌	NA 🛄 -		
5. Sample(s) in proper container(s)?		Yes 🗹	No			
6. Sufficient sample volume for indicated test(s)?		Yes 🔽	No 🗌			
7 Are samples (except VOA and ONG) properly	preserved?	Yes 🗹	No 🗌			
8. Was preservative added to bottles?		Yes 🗌	No 🗹	NA	· · · ·	
9. VOA vials have zero headspace?		Yes 🗹	No 🗌	No VOA Vials 🗌		. /
10. Were any sample containers received broken?	> -	Yes 🗌	No 🗹 🛛	# of preserved	118	
<ol> <li>Does paperwork match bottle labels?</li> <li>(Note discrepancies on chain of custody)</li> </ol>		Yes 🗹	No 🗌	for pH:	>12 unless noted)	
12. Are matrices correctly identified on Chain of Co	ustody?	Yes 🗹	No 🗌	Adjusted?		
13. Is it clear what analyses were requested?		Yes 🗹	No 🗌			
14. Were all holding times able to be met? (If no, notify customer for authorization)		Yes 🗹	No 🗔 🚽	Checked by:		
<b>Special Handling (IT applicable)</b> 15. Was client notified of all discrepancies with thi	s order?	Yes	No 🗌	NA 🗹		
Person Notified:	Date			an a	· · ·	
By Whom:	Via:	eMail Phone	∋ 🗍 Fax	In Person		
Regarding:					•	
Client Instructions:	-					 
16. Additional remarks:						
17 Cooler Information						
Cooler No Temp °C Condition Sea	Intact Seal No Se	al Date Sigi	ned By		•	
1 0.4 Good Yes						

	Time: Relinquished by: Bate Time Remarks: See Analytical Methods and Target Analytes.		S         S			A H in the second secon							■	I Rush       B - Collection Wells       -       -       nnual Event       Illen Hains       vative       V Payne       s<       no       restore       18 (ULIATT)       cl       247       262       27       281       292       21       201       21       202       21       202       21       202       21       202       21       202       21       202		Turn-Around X Standart Project Nam Date: Project Man Project Man Project Man Project Man Sampler: Sampler: Sampler: Japa and # Type and # Sampler: Sampler: Sampler: Aom VOA-5 Sampler: Aom VOA-5 Sampler: Aom VOA-5 Sampler: Aom VOA-5 Sampler: Aom VOA-5 Sampler: Aom VOA-5 Sampler: Aom VOA-5 Sampler: Aom VOA-5 Aom VOA-5 Ao	Istody Record         toomfield Terminal         tains@Andeavor.com         A-1483         A-1480         A-1483	Of-CU           avor - BI           avor - BI           Bloom           Bloom           Bloom           H2O           H2O           H2O	Time:         Time           Time:         Time
ne: Relinquished by: Date Time Remarks: See Analytical Methods and Target Analytes.															_				
ne: Relinquished by: Date Time Remarks: See Analytical Methods and Target Analytes.										$\square$			_						
ne: Relinquished by: Date Time Remarks: See Analytical Methods and Target Analytes.											_	$\downarrow$	+						
me: Relinquished by: Date Time Remarks: See Analytical Methods and Target Analytes										$\square$		$\dashv$	$\dashv$						
Image: See Analytical Methods and Target Analytes												$\square$							
me: Relinquished by: Date Time Remarks: See Analytical Methods and Target Analytical Methods ana																			
Image: See Analytical Methods and Target Analytes:       Image: See Analytical Methods and Target Analytes:       Image: See Analytical Methods and Target Analytes:											$\times$			77	NE	250ML AMBER-1	C WO + GO DUP	420	1240
SY0       H. O       Z WO + CO Dure       Amageneric       NEAT       X       Imageneric       X	340       4/2.0       7       1 </td <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>L 002</td> <td>ACC 2</td> <td>40m K</td> <td>ZWOTED DUP</td> <td>K20</td> <td>540</td>			X										L 002	ACC 2	40m K	ZWOTED DUP	K20	540
Stop       KaO       ZWO+GO DUP       YOS       ML       OO       X       I       X       I       X       I       X       I       I       X       I       X       I       I       X       I       X       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I       I       X       I	Swe       K2.0 $ZWO+GOID       40S_{WL}^{2} 1000 1000$	240       K*0       ZMO+60       <									×			∋at	Ne	250 ml amber-1	CW 0+60	H <sub>2</sub> O	540
Syco       H <sub>2</sub> O       CW 0+60 $250 \text{ ml}$ Neat       X <t< td=""><td>Skyze         H<sub>2</sub>O         CW 0+60         <math>260 \text{ ml}</math> amber 1         Neat         ×</td><td>Image: 1       Neat       250 ml       Neat       Neat       Neat       Neat         State       <math>K_{a}</math> O       <math>ZW O + 60</math> <math>ZW O + 60</math></td><td></td><td>×</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Ŧ</td><td>40ml VOA-5</td><td>CW 0+60</td><td>H<sub>2</sub>O</td><td>1540</td></t<>	Skyze         H <sub>2</sub> O         CW 0+60 $260 \text{ ml}$ amber 1         Neat         ×	Image: 1       Neat       250 ml       Neat       Neat       Neat       Neat         State $K_{a}$ O $ZW O + 60$		×											Ŧ	40ml VOA-5	CW 0+60	H <sub>2</sub> O	1540
54/6       H <sub>2</sub> O       CW 0+60       40mi VOA-5       HCI       CD1       I       X       I       X       I       I         54/9       H <sub>2</sub> O       CW 0+60       amber-1 amber-1       Neat       C       X       I       X       I       I       I       X       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I<		$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Air Bubbles	im92) 0728	sos1 Pestic	O,∃) anoinA	ым 8 Ая́ЭЯ	0168) HAA	EDB (Metho	учіәМ) НЧТ	0) 88108 H9T	BTEX+MTE	ITM+XJT8	rvative HEAL No.	Preser	Container Type and #	Sample Request ID	Matrix	Time
Time       Matrix       Sample Request ID       Container       Preservative       HEAL No.         54/0       H2O       CW 0+60       40ml VOA-5       HCI       7/79e       360 ml       Ani formation         54/0       H2O       CW 0+60       30ml       Neat       18 DEX+MTE       REX+MTE         54/0       H2O       CW 0+60       30ml       Neat       81 EX+MTE       REX+MTE         54/0       H2O       CW 0+60       30ml       Neat       250 ml       No       No         54/0       H2O       CW 0+60       250 ml       No       No       No       No       No         54/0       H2O       CW 0+60       350 ml       No       No       No       No       No       No         54/0       H2-0       CW 0+60       350 ml       No	Time       Matrix       Sample Request ID       Container       Preservative       HEAL No.       Ali Bubbles         55%       H2O       CW0+60       40ml VOA-5       HCI       700       250 ml       Amber 1       Anions (F. C)       8081 Pesting         5%       H2O       CW0+60       40ml VOA-5       HCI       700 l       260 ml       Amber 1       Amber 6       Amber 7       Amber 6       Amber 7       Amber 7 <td< td=""><td>Time       Matrix       Air Bubbles         Time       Matrix       Syroe       H2         Container       Type and #       Type and #       Type and #         Type       Type       Type and #       Type and #         Type       Type       Mon VOA-S       HCI       PCU-IATT         Type       Type       Type and #       Type and #       Type and #         Type       Mon VOA-S       HCI       PCU-IATT       EEDB (Methr         Type       Matrix       Store       M2       Amons (F.C       EEDB (Methr         Type       Matrix       Neat       Type       Amons (F.C       EEDB (Methr         Type       Matrix       Type       Type       Amons (F.C       EEDB (Methr         Type       Matrix       Type       Type       Type       EDB (Methr</td><td></td><td>8 (A 0V-i</td><td>sebic</td><td>ON'I</td><td>slate</td><td>or g</td><td>g po</td><td>≯ po</td><td>1 O H</td><td>3E+.</td><td>3E+. ר_ך</td><td>10:0-9.3 CE )=0.1</td><td>peratur</td><td>Sample Tem</td><td></td><td></td><td>;</td></td<>	Time       Matrix       Air Bubbles         Time       Matrix       Syroe       H2         Container       Type and #       Type and #       Type and #         Type       Type       Type and #       Type and #         Type       Type       Mon VOA-S       HCI       PCU-IATT         Type       Type       Type and #       Type and #       Type and #         Type       Mon VOA-S       HCI       PCU-IATT       EEDB (Methr         Type       Matrix       Store       M2       Amons (F.C       EEDB (Methr         Type       Matrix       Neat       Type       Amons (F.C       EEDB (Methr         Type       Matrix       Type       Type       Amons (F.C       EEDB (Methr         Type       Matrix       Type       Type       Type       EDB (Methr		8 (A 0V-i	sebic	ON'I	slate	or g	g po	≯ po	1 O H	3E+.	3E+. ר_ך	10:0-9.3 CE )=0.1	peratur	Sample Tem			;
Time     Matrix     Sample Temperature:     Container     Preservative       Sample Request ID     Type and #     Type and #     Type and #     Type and #       Syce     H2O     Cw 0+60     40mi VOA-5     HCI     Preservative       Syce     H2O     Cw 0+60     360 ml     Annions (F.C.I,NO       Syce     H2O     Cw 0+60     3801 Pesticides       Syce     H2O     CW 0+60     2601 Pice       Syce     H2O     CW 0+60     2601 Pice       Syse     H2O     CW 0+60     3801 Pesticides       Syse     H2O     CW 0+60     2602 Pice     CM 0+60       Syse     H2O     CW 0+60     2602 Pice     CM 0+60       Syse     H2O     CW 0+60     2602 Pice     2602 Pice       Syse     H2O     CW 0+60     2	Time       Matrix       Sample Temperature: D.4-0.2 (F( )=0.1)         Sample Temperature: D.4-0.2 (F( )=0.1)       Matrix       Sample Temperature: D.4-0.2 (F( )=0.1)         Sample Temperature: D.4-0.2 (F( )=0.1)       Type and #       Type and #       Type and #         Type       Type       Matrix       Sample Request ID       Container         Preservative       HEAL NO.       Type and #       Type and #       Type and #         Type       Matrix       Sample Request ID       Container       Preservative       HEAL NO.         Type       Matrix       Dontainer       Preservative       HEAL NO.       K       S270 (Sem1-VO         Stype       H2       C       CW0+60       250 ml       N       N       RETEX+MTBE+         Stype       H2       D       CW0+60       250 ml       N       N       RETEX+MTBE+         Stype       H2       D       CW0+60       250 ml       N       N       RETEX+MTBE+         Stype       H2       D       CW0+100       N       N       N       RETEX+MTBE+         Stype       H2       D       CW0+100       N       N       N       RETEX+MTBE+         Stype       H2       D       CW0+100 </td <td>Sample Request ID       Anr Bubbles (Y - 1)         Sample Request ID       Anne         Type and #       Type and #         Type and #</td> <td></td> <td>Kat: (A)</td> <td>8/\$</td> <td>3N'<sup>8</sup></td> <td>. !</td> <td>576</td> <td></td> <td>81</td> <td>TX3</td> <td>НЧТ</td> <td>TME</td> <td>y rayue s 🗆 No</td> <td></td> <td>On Ice:</td> <td></td> <td>EXCEL</td> <td>Type)</td>	Sample Request ID       Anr Bubbles (Y - 1)         Sample Request ID       Anne         Type and #       Type and #         Type and #		Kat: (A)	8/\$	3N' <sup>8</sup>	. !	576		81	TX3	НЧТ	TME	y rayue s 🗆 No		On Ice:		EXCEL	Type)
Time         Matrix         Sample Request ID         On tes:         Lives         No           Sample Temperature: OL-O.3 (rf) = 0.0         Sample Request ID         Type and #         Type         No         Sample Request ID         Type and #         Type and #         Type         Sample Request ID         Sample	Time         Matrix         Sample Temperature: CL-O:2)         On ice:         LYGS           7909         Time         Matrix         Sample Temperature: CL-O:2)         On ice:         LYGS           7900         Time         Matrix         Sample Temperature: CL-O:2)         On ice:         LYGS           7900         Type and #           7900         Type and #           7900         CW0460         40ml VOA-S         HCI         OD1         KCRA & Metals           7900         Annions (F.CLNO <sub>2</sub> , M         N         N         N         N           7900         CW0460         Annions (F.CLNO <sub>2</sub> , M         Strest-MTBE+TTBE           7900         Type and #         Type and #         Type and #         N           7900         CW0460         Annions (F.CLNO <sub>2</sub> , M         Strested Strest (YOA)         Strested Strest (YOA)           7900         CW0460         Annions (F.CLNO <sub>2</sub> , M         N         N         Strested Strest (YOA)           7900         Matrix         Neat         N         N         N         N         N           <	Type)       EXCEL         Type)       Time         Matrix       Sample Temperature         Matrix	1)	, мтві	)9 <u>2808</u>	S,PO4,S		(SMISC	()	()	ENDED (	) SED)H	<u></u> 108) 8'8	v Pavne	Trac	Sampler:	X Level 4 (Full Validation)		ard
Remain         X         Level 4 (Full Validation)           Remain         X         Level 4 (Full Validation)         Sample:         X         Level 4 (Full Validation)           Sample:         Cample:         C	and       X Level 4 (Full Validation)         All Eubbles (Y or N)       Sample:         All Eubergrantine       HEAL No.         All	and       X Level 4 (Full Validation)         A Level 4 (Full Validation)       A Level 4 (Full Validation)         Sample:       A Level 4 (Full Valid		10 3	CB,	'os						(luc	(12						ackage:
All         Bubbles (Y or N)           All         Bubbles (Y or N)           All         Bubbles (Y or N)           Sample         Percentative         All         Percentative         All           Sample         Percentative         All         Percentative         All         Percentative           Sample         Percentative         All         Provide (Follow)         Sample (Follow)         Sample (Follow)         Sample (Follow)           Sample         Percentative         All         Provide (Follow)         Sample (Follow)         Sample (Follow)           Sample         Percentative         All         Provide (Follow)         Sample (Follow)         Sample (Follow)         Sample (Follow)           Sample         Percentative         Baller         No         Sample (Follow)         Sample (Follow)         Sample (Follow)           Sample         Percentative         Baller         No         Sample (Follow)         Sample (Follow)         Sample (Follow)         Sample (Follow)         Sac	Alere         Alere <th< td=""><td>Geoge         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Class         All Bubbles (Y or N)           All Class         All (B (B (D) Or N)           All Class         All (B (D) Or N)           All Class         All (B (D) Or N)           All Class         All (B (D) Or N)           All C</td><td></td><td>λju</td><td>s,</td><td>⊄)</td><td></td><td></td><td></td><td></td><td>(J.)</td><td>(/</td><td><u> </u></td><td>llen Hains</td><td>ager: A</td><td>Project Man</td><td>Hains@Andeavor.com</td><td>Allen.S.</td><td>ax#:</td></th<>	Geoge         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         All Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Bubbles (Y or N)         Bubbles (Y or N)           All Class         All Bubbles (Y or N)           All Class         All (B (B (D) Or N)           All Class         All (B (D) Or N)           All Class         All (B (D) Or N)           All Class         All (B (D) Or N)           All C		λju	s,	⊄)					(J.)	(/	<u> </u>	llen Hains	ager: A	Project Man	Hains@Andeavor.com	Allen.S.	ax#:
a.34:       Allen S.Hains@Andeavor.com       Project Manager: Allen Hains         addage:       Allen S.Hains@Andeavor.com       Project Manager: Allen Hains         addage:       X Level 4 (Full Validation)       Sample:         Addage:       X Level 4 (Full Validation)       Sample:         Amonge:       Tracy Payne       Sample:       Anone (F. Culvo_snoc, Pol, Sol)         Amonge:       Tracy Payne       Sample:       Anone (F. Culvo_snoc, Pol, Sol)         Amonge:       Heat       No       CW Anone (F. Culvo_snoc, Pol, Sol)         Stop H_JO       CW 0+60       Aomin VOA:8       HELL NO         Amonge:       Hell       No       CW Anone (F. Culvo_snoc, Pol, Sol)         Stop H_JO       CW 0+60       Aomin VOA:8       HELL NO         Type and #       Type and #       Type and #       No         Stop H_JO       CW 0+60       Aomin VOA:8       No       No         Stop H_JO       CW 0+60       Aomin VOA:8       No       No       No         Stop H_JO       CW 0+60       Anone (F. Culvo_sol, No, Pol, Sol)       No       No       No         Stop H_JO       CW 0+60       Anone (F. Culvo, No, Pol, Sol)       No       No       No       No         Stop H_JO <td< td=""><td>arktit         Allen. SHahirs@Andeavor.com         Project. Manager. Allen Hairs@Andeavor.com           obige:         Matrix         Sample:         X Level 4 [full Validation]           off         Matrix         Sample:         Tracy Payne           Sample:         Tracy Payne         Sample:         Tracy Payne           Sample:         Tacy Payne         Sample:         Tacy Payne           Sample:         Tacy Payne         Sample:         Sample:         Sample:           Sample:         Matrix         Sample:         Matrix         Sample:         Matrix           Sample:         Matrix         Sample:         Matrix         Sample:         Matrix         Sample:           Sample:         Matrix         Sampri         Matrix         Sample:&lt;</td><td></td><td></td><td>luest</td><td>Req</td><td>/sis</td><td>naly</td><td>A</td><td></td><td></td><td></td><td></td><td></td><td></td><td>3266</td><td>PO# 1262</td><td>4-1483</td><td>915-53</td><td></td></td<>	arktit         Allen. SHahirs@Andeavor.com         Project. Manager. Allen Hairs@Andeavor.com           obige:         Matrix         Sample:         X Level 4 [full Validation]           off         Matrix         Sample:         Tracy Payne           Sample:         Tracy Payne         Sample:         Tracy Payne           Sample:         Tacy Payne         Sample:         Tacy Payne           Sample:         Tacy Payne         Sample:         Sample:         Sample:           Sample:         Matrix         Sample:         Matrix         Sample:         Matrix           Sample:         Matrix         Sample:         Matrix         Sample:         Matrix         Sample:           Sample:         Matrix         Sampri         Matrix         Sample:<			luest	Req	/sis	naly	A							3266	PO# 1262	4-1483	915-53	
915-531-1483         PO# 126:2366           315-531-1483         PO# 126:2366           315-531-1483         PO# 126:2366           315-531-1483         PO# 126:2366           315-531-1483         Pomber of the state of th	915-534-1483       PO# 12623266         Pite Bubbles (Y or N)       Pompler         Analysis       Pompler       Andreavor.com       Point Bit Retrint         Provide aver.       Matrix       Sample Request ID       Sample Request ID       Pompler       Andrease (Y or N)         Provide aver.       Matrix       Sample Request ID       Sample Request ID       Sample Request ID       Pompler       Andrease (Y or N)         Provide Art R       Matrix       Sample Request ID       Container       Provide Art R.1)       Andrease (Y or N)         Provide R       Matrix       Sample Request ID       Sample Request ID       Sample Request ID       Annone (F.CILVOA)       Annone (F.CILVOA)         Provide R       Matrix       Sample Request ID       Sample Request ID       Annone (F.CILVOA)       Annone (F.CILVOA)         Provide R       Matrix       Sample Request ID       Container       Provide Art R.1       Annone (F.CILVOA)         Provide R       Matrix       Sample Request ID       Annone (F.CILVA)       Annone (F.CILVA)       Annone (F.CILVA)         Provide R       Matrix       Sample Request ID       Annone (F.CILVA)       Annone (F.CILVA)       Annone (F.CILVA)         Provide R       Matrix       Contrainer       F.Annone (F.CILVA)       Annone (	915-534-1433         PIC# 126:23266           -add:         Allen: Shalins@Andeavor.com         Propertial           -add:         Allen: Shalins@Andeavor.com         Propertial           Allen: Shalins@Andeavor.com         Propertial         Allen: Shalins@Andeavor.com           Propertial         X         X         Level 4 (Full Validation)           Batex         Allen: Shalins@Andeavor.com         Project Manager: Allen Hains           Matrix         Sample:         Tacy Payne         Sample:         Allen State           Sample:         Tacy Payne         Sample:         Anions (F.C.Iu, O., NO., PO., SO.)         Allen: State           Sample:         Matrix         Sample:         Tacy Payne         Sample:         Anions (F.C.Iu, O., NO., PO., SO.)           Stample:         H2         No         No         Sample: Allen hains         Sample: Allen hains           Sample:         Matrix         Sample: Fight:         No         Sample: Allen hains         Sample: Allen hains           Sample:         Matrix         Sample: Fight:         Allen: No         Allen: No         Allen: No           State         Hains         Sample: The and #         Type and #         Allen: No         Sample: Allen hold allen: No         Sample: Allen hold allen: Tracy Payne <td>107</td> <td>-345-4</td> <td>505</td> <td>Fax</td> <td>_</td> <td>975</td> <td>45-3</td> <td>05-3</td> <td>-el. 5</td> <td>μ</td> <td></td> <td>nnual Event</td> <td>emi-A</td> <td>Project #: S</td> <td>field, NM 87413</td> <td>Bloom</td> <td></td>	107	-345-4	505	Fax	_	975	45-3	05-3	-el. 5	μ		nnual Event	emi-A	Project #: S	field, NM 87413	Bloom	
Biomrifield, NW 87413         Project # Semi-Annual Event         Ari Flaubhes (Y or N)           915-534-1483         Polect Wanager: Allen Hairs         Polect Wanager: Allen Hairs         Project # Semi-Voh)           8496-53         Polect Wanager: Allen Hairs         Project # Semi-Voh)         Project Wanager: Allen Hairs           8496-53         Project Wanager: Allen Hairs         Anabel = France         Anabel = France           8496-53         Project Wanager: Allen Hairs         Anabel = France         Anabel = France           8496-53         Project Wanager: Allen Hairs         Anabel = France         Anabel = France           8406-53         Project Wanager: Allen Hairs         Anabel = France         Anabel = France           8406-53         Project Wanager: Allen Hairs         Anabel = France         Anabel = France           8406-53         Project Wanager: Allen Hairs         Anabel = France         Anabel = France           8416-50         Project Wanager: Allen Hairs         Project Wanager: Allen Hairs         Anabel = France           8417         Sample: France         Project Wanager: Allen Hairs         Project Wanager: Allen Hairs         Anabel = France           8417         Sample: France         Project Wanager: Projec	Bioomfield, NM 87413         Project #: Semi-Annual Event         Project #: Semi-Annual Event           315-534-1483         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event           315-534-1483         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event           315-534-1483         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event           315-534-1483         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event           315-534-1483         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event           315-532.566         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event         Polect #: Semi-Annual Event           315-345-3417         Polect #: Semi-Annual Event         Polect #: Polect #: Semi-Annual Event         Polect #: P	Bloomfield, NM 87413         Project #: Semi-Annual Event         Andreation         Project #: Semi-Annual Event           315-534-14833         Project #: Semi-Annual Event         Project #: Semi-Annual Event         Project #: Semi-Annual Event           315-534-14833         Project #: Semi-Annual Event         Project #: Semi-Annual Event         Project #: Semi-Annual Event           315-534-14833         Project #: Semi-Annual Event         Project #: Semi-Annual Event         Project #: Semi-Annual Event           2015-534-14833         Project #: Semi-Annual Event         Project #: Semi-Annual Event         Project #: Semi-Annual Event           2015-534-14833         Project #: Semi-Annual Event         Project #: Semi-Annual Event         Project #: Semi-Annual Event           2016::::::::::::::::::::::::::::::::::::	87109	e, NM	lergu	nbno	Alt -	H	kins I	Hawh	901	4		-		Date:	4990	s: 50 CR	ddres
Interse         SGC R4390         Date:	Index         So CR 4990         Date:         -	Indexes:         EGC R 4990         Date:         Alt Bublies (Y or N)           Bloomfield, NM 8743         Project # Semi-Annual Event         Eak # Alean         Project # Semi-Annual Event           Bloomfield, NM 87433         Project # Semi-Annual Event         Point 12223266         Fax 505-345-4107           Bloomfield, NM 87433         Point 12223266         Fax 505-345-4107         Point 12223266           Fait         All Class of the set of th		tal.com	men	/iron	llenv	v.hai	M					<b>B</b> - Collection Wells	le: NBE	Project Nam			
Project Kares         Sign Cr 4390         Date:	Project Name: NBB - Collection Wells       ddress: 60 CR 4990       Date:	Project Name: NBB - Collection Wells       Indiress: 60 CR 4390     Date:	DRATORY	ABC	ב ש ניס	Ë	Ξ×							] Rush		X Standard	oomfield Terminal	avor - Bl	Andei
Indeavor - Bioomfield Terminal         X Standard         Ruth Standard	Indeavor - Bioomfield Terminal driss: 50 CR 4390         X Standard Project Name: NBB - Collection Wells         ALL SLABARADY Mailemvitormentation           Project Name: NBB - Collection Wells         Project Name: NBB - Collection Wells         AMA VIG         MA VIG           Project Name: NBB - Collection Wells         Project Name: NBB - Collection Wells         Ma VIG         Ma VIG           Project Name: NBB - Collection Wells         Project Name: NBB - Collection Wells         Ma VIG         Ma VIG           Project Name: NBB - Collection Wells         Prove Name         Prove Name         Ma VIG           Project Name: NBB - Collection Wells         Prove Name         Prove Name         Ma VIG           Prove Name         Prove Name         Prove Name         Prove Name         Prove Name           Prove Name         Prove Name         Prove Name         Prove Name         Prove Name           Prove Name         Prove Name         Prove Name         Prove Name         Prove Name           Prove Name         Prove Name         Prove Name         Prove Name         Prove Name           Prove Name         Prove Name         Prove Name         Prove Name         Prove Name           Prove Name         Prove Name         Prove Name         Prove Name         Prove Name           Prove Name         Prove N	Indeavor - Bloomfield Terminal       X Standard       Rush         Addread       Rush       Project Name: NBB - Collection Wells         Project Name: NBB - Collection Wells       Project Name: NBB - Collection Wells       Mail Fish Mailenvironmental com         Addread       Rush       Project Name: NBB - Collection Wells       Mail Fish Mailenvironmental com         Addread       Rush       Project Name: NBB - Collection Wells       Addread       Rush         Addread       Rush       Project Name       Mail Fish Mailenvironmental com       Mail Fish Mailenvironmental com         Addread       Rush       Rush       Rush       Rush       Rush       Rush       Rush         Addread       Rush       Rush       Rush       Rush       Rush       Rush       Rush       Rush         Addread       Rush       Rush       Rush       Rush       Rush       Rush       Rush       Rush         Addread       Rush       Rush       Rush       Rush       Rush       Rush       Rush       Rush         Addread       Rush       Rush <td>MENTAL</td> <td>NCO</td> <td></td> <td>22</td> <td>L</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>d Time:</td> <td>Turn-Around</td> <td>stody Record</td> <td>-of-Cu</td> <td>lain</td>	MENTAL	NCO		22	L								d Time:	Turn-Around	stody Record	-of-Cu	lain



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

April 24, 2018

Allen Hains Andeavor 50 CR 4990 Bloomfield, NM 87413 TEL: (505) 801-5616 FAX

RE: Downgradient Wells 4 18 18

OrderNo.: 1804A80

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/19/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1804A80 Date Reported: 4/24/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor

Client Sample ID: MW-35 Collection Date: 4/18/2018 1:15:00 PM

<b>Project:</b>	Downgradient Wells 4 18 18			Collection 1	Date: 4/18/20	)18 1:15:00 PM
Lab ID:	1804A80-001	Matrix:	AQUEOUS	<b>Received</b>	Date: 4/19/20	018 7:15:00 AM
Analyses		Result	PQL Qual	Units	DF	Date Analyzed
EPA MET	HOD 8260: VOLATILES SHOR	T LIST				Analyst: AG
Benzene	•	ND	1.0	µg/L	1	4/20/2018 2:24:53 PM
Toluene		ND	1.0	µg/L	1	4/20/2018 2:24:53 PM
Ethylben	zene	ND	1.0	µg/L	1	4/20/2018 2:24:53 PM
Methyl te	ert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/20/2018 2:24:53 PM
Xylenes,	Total	ND	1.5	µg/L	1	4/20/2018 2:24:53 PM
Surr: 4	4-Bromofluorobenzene	112	70-130	%Rec	1	4/20/2018 2:24:53 PM
Surr:	Surr: Toluene-d8		70-130	%Rec	1	4/20/2018 2:24:53 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 3
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report Lab Order 1804A80 Date Reported: 4/24/2018

#### **CLIENT:** Andeavor Client Sample ID: Trip Blank **Project:** Downgradient Wells 4 18 18 Collection Date: 4/18/2018 1804A80-002 Received Date: 4/19/2018 7:15:00 AM Lab ID: Matrix: AQUEOUS Analyses Result **PQL** Qual Units DF **Date Analyzed EPA METHOD 8260: VOLATILES SHORT LIST** Analyst: AG ND 1.0 1 4/20/2018 2:47:58 PM Benzene µg/L Toluene ND 4/20/2018 2:47:58 PM 1.0 µg/L 1 Ethylbenzene ND 1.0 µg/L 1 4/20/2018 2:47:58 PM Methyl tert-butyl ether (MTBE) ND 1.0 µg/L 1 4/20/2018 2:47:58 PM Xylenes, Total ND 1 1.5 µg/L 4/20/2018 2:47:58 PM Surr: 4-Bromofluorobenzene 117 70-130 %Rec 1 4/20/2018 2:47:58 PM Surr: Toluene-d8 99.9 70-130 %Rec 1 4/20/2018 2:47:58 PM

Hall Environmental Analysis Laboratory, Inc.

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Bla	ınk
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 2 of 3
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	uge 2 01 5
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit a	s specified

WO#: **1804A80** 

#### Client: Andeavor

Project: Downgradient Wells 4 18 18

Sample ID 100ng Ics	SampT	ype: LC	S4	Tes	tCode: E	PA Method	8260: Volatile	es Short L	ist	
Client ID: BatchQC	Batch	n ID: <b>R5</b>	0722	F	RunNo: 5	0722				
Prep Date:	Analysis D	ate: 4/	20/2018	S	SeqNo: 1	646068	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.6	80	120			
Toluene	21	1.0	20.00	0	104	80	120			
Ethylbenzene	21	1.0	20.00	0	104	80	120			
Methyl tert-butyl ether (MTBE)	18	1.0	20.00	0	91.3	80	120			
Xylenes, Total	62	1.5	60.00	0	104	80	120			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			
Sample ID <b>rb</b>	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8260: Volatile	es Short L	.ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b>	SampT Batcl	ype: <b>ME</b> 1 ID: <b>R5</b>	3LK 0722	Tes F	tCode: E	PA Method 0722	8260: Volatile	es Short L	ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date:	SampT Batch Analysis D	Type: ME n ID: R5 Date: 4/	3LK 0722 20/2018	Tes F S	tCode: El RunNo: 5 SeqNo: 1	PA Method 0722 646080	8260: Volatile Units: μg/L	es Short L	ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date: Analyte	SampT Batch Analysis D Result	Type: <b>ME</b> n ID: <b>R5</b> Date: <b>4</b> / PQL	3LK 0722 20/2018 SPK value	Tes F S SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	<b>8260: Volatile</b> Units: μg/L HighLimit	es Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene	SampT Batcl Analysis D Result ND	ype: ME ID: R5 Date: 4/ PQL 1.0	3LK 0722 20/2018 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit	es Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene	SampT Batcl Analysis D Result ND ND	<sup>r</sup> ype: <b>ME</b> n ID: <b>R5</b> Date: <b>4/</b> PQL 1.0 1.0	BLK 0722 20/2018 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit	es Short L %RPD	<b>ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene	SampT Batch Analysis D Result ND ND ND	Type: <b>ME</b> n ID: <b>R5</b> Date: <b>4/</b> PQL 1.0 1.0 1.0	BLK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	<b>8260: Volatile</b> Units: μ <b>g/L</b> HighLimit	es Short L %RPD	<b>ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE)	SampT Batch Analysis D Result ND ND ND ND	Type: ME ID: R5 Date: 4/ PQL 1.0 1.0 1.0 1.0	BLK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	<b>8260: Volatile</b> Units: μ <b>g/L</b> HighLimit	es Short L %RPD	<b>ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE) Xylenes, Total	SampT Batch Analysis D Result ND ND ND ND ND ND	Type: ME D ID: R5 Date: 4/ PQL 1.0 1.0 1.0 1.0 1.0 1.5	BLK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	<b>8260: Volatilı</b> Units: μ <b>g/L</b> HighLimit	es Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE) Xylenes, Total Surr: 4-Bromofluorobenzene	SampT Batch Analysis D Result ND ND ND ND ND ND ND	Type:         ME           n ID:         R5           Date:         4/           PQL         1.0           1.0         1.0           1.0         1.0           1.0         1.0	BLK 0722 20/2018 SPK value 10.00	Tes F SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC 113	PA Method 0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit 130	es Short L %RPD	<b>.ist</b> RPDLimit	Qual

#### **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
- PQL Practical Quanitative Limit
- 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

Page 3 of 3

#### HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

	ber: 1804A80	RcptNo: 1
Received By: Isaiah Ortiz 4/19/2018 7:15:00 /	AM	IC
Completed By: Michelle Garcia 4/19/2018 4:14:41	PM	Muhille Comment
Reviewed By: = 10 C1/19/18 LB:ENM		1
Chain of Custody		
1. Is Chain of Custody complete?	Yes 🗹	No 🗌 Not Present 🗌
2. How was the sample delivered?	Courier	
l an la		
3. Was an attempt made to cool the samples?	Yes 🖌	No 🗌 NA 🗍
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🗹	
5. Sample(s) in proper container(s)?	Yes 🖌	No 🗌
5 Sufficient sample volume for indicated test(s)?	Yes 🔽	No 🗌
7 Are samples (except VOA and ONG) properly preserved?	Yes 🗹	No 🗌
3. Was preservative added to bottles?	Yes 🗌	No 🗹 NA 🗆
9. VOA vials have zero headspace?	Yes 🔽	No 🗌 No VOA Vials 🗌
0. Were any sample containers received broken?	Yes	No 🗹 # of preserved
1. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No for pH:
2 Are matrices correctly identified on Chain of Custody?	Yes 🔽	No Adjusted
3. Is it clear what analyses were requested?	Yes 🗹	No 🗌
4. Were all holding times able to be met?	Yes 🔽	No Checked by:
(in ito, notify customer for aution/zation.)	,	
pecial Handling (if applicable)		
5. Was client notified of all discrepancies with this order?	Yes 🗌	
Person Notified: Date	1	
By Whom: Via:	🗌 eMail 🗌	Phone 🗌 Fax 🔄 In Person
Regarding:		
Client Instructions:	·	
6. Additional remarks:		
Cooler Information           Cooler No         Temp °C         Condition         Seal Intact         Seal No           1         0.4         Good         Yes         Intact         Seal No	Seal Date	Signed By

	0 <sup>4</sup>		RATORY		7109	2	-			(	or N	· /)	Air Bubbles	· ·									ardet Apolytes	alger Allayros.	
	1				NM 8	5-410	st	<b>.</b>			(¥	٥٨-	im98) 0728											2	
			₹₹	ental	aue.	5-34	sque		TBE or	W ')		a (A	8260B (VO	×	$\times$						_	+	- 20	۵ ۵	
			25		aner	ax 5(	is Re	(	*0S'*0	-000	0 / 2			<u> </u>	 -			 _			-+				
			Ĩ	envir	Albu	ũ	alys				5	slete	ARCRA 8 Me				_	_	-		+				
				(,hall	ч Щ	975	Ar		(SI/	VISC	)728	3 10	0168) HA9											JAnce	
			Ż		tins N	45-3(				()	.408	s po	EDB (Metho										 		
				•	Hawk	05-3				()	81.	≯ pc	TPH (Metho											000	
					901	Tel. 5				שם	<u>юя</u>	(G)						 				_	;	ź	
				ļ	ч	•			(1208)	) s.c		אב+. 	911NI+X318 9TW+X3T8					 	$\dashv$	_	_	_			
	[									T	T	<u> </u>			 	_	_	 	+						
ą				idient Wells	ß	l Event		lains		ne	D No	1-0.2(cr) 0.1	HEAL No.	100	COD		-						Date Time	4//8/18/14/13 Date Time 4 [19 [18 715	
		I Time:	I 🗆 Rush	e: Downgra	4 -18 -	emi-Annua	3266	ager: Allen H		Tracy Pav	☑ Yes	perature: 0.6	Preservative Type	НСІ	HCL									Fibut	
		Turn-Around	X Standarc	Project Nam	Date:	Project #: St	PO# 1262	Project Man		Sampler	On Ice:	Sample Tem	Container Type and #	40ml VOA-5	הסאר עסא								Received by:	Received by:	
	ľ	istody Record	loomfield Terminal		R 4990	field, NM 87413	4-1483	.Hains@Andeavor.com	X Level 4 (Full Validation)				Sample Request ID	MW-35	TRIP BLANK							-	ed by:	dby: thu hulte	
	1	-of-CL	avor - B		s: 50 CF	Bloom	915-53	Allen.S			EXCEL		Matrix	H <sub>2</sub> 0	04								Relinquishe	Relinquishe	>
		hain	Ande		Addres		#	ır Fax#:	Package Idard	ĩ	(Type)		Time	1315	1								Time:	1415 Time: - 1856	·
			Client:		Mailing	2	Phone	email o	QA/QC	□ Othe	XEDC		Date	<u>a/a/h</u>	-Xa/iE			-					Date:	HAR/B	



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

April 24, 2018

Allen Hains Andeavor 50 CR 4990 Bloomfield, NM 87413 TEL: (505) 801-5616 FAX

RE: Refinery Wells 4 18 18

OrderNo.: 1804A81

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/19/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1804A81 Date Reported: 4/24/2018

CLIENT: Andeavor			Client Sample	e <b>ID:</b> MW-5	2
<b>Project:</b> Refinery Wells 4 18 18			Collection I	Date: 4/18/20	018 9:35:00 AM
Lab ID: 1804A81-001	Matrix:	AQUEOUS	Received I	Date: 4/19/20	018 7:15:00 AM
Analyses	Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SH	IORT LIST				Analyst: AG
Benzene	ND	1.0	µg/L	1	4/20/2018 3:11:08 PM
Toluene	ND	1.0	µg/L	1	4/20/2018 3:11:08 PM
Ethylbenzene	ND	1.0	µg/L	1	4/20/2018 3:11:08 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/20/2018 3:11:08 PM
Xylenes, Total	ND	1.5	µg/L	1	4/20/2018 3:11:08 PM
Surr: 4-Bromofluorobenzene	112	70-130	%Rec	1	4/20/2018 3:11:08 PM
Surr: Toluene-d8	99.2	70-130	%Rec	1	4/20/2018 3:11:08 PM

### Hall Environmental Analysis Laboratory, Inc.

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 2
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

WO#: 1804A81

24-Apr-18

## Client:AndeavorProject:Refinery Wells 4 18 18

Sample ID 100ng lcs	SampT	ype: LC	S4	Tes	tCode: E	PA Method	8260: Volatile	es Short L	.ist	
Client ID: BatchQC	Batcl	n ID: <b>R5</b>	0722	F	RunNo: 5	0722				
Prep Date:	Analysis D	Date: 4/	20/2018	S	SeqNo: 1	646068	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.6	80	120			
Toluene	21	1.0	20.00	0	104	80	120			
Ethylbenzene	21	1.0	20.00	0	104	80	120			
Methyl tert-butyl ether (MTBE)	18	1.0	20.00	0	91.3	80	120			
Xylenes, Total	62	1.5	60.00	0	104	80	120			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			
Sample ID <b>rb</b>	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8260: Volatile	es Short L	.ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b>	Samp1 Batcl	ype: <b>ME</b> 1 ID: <b>R5</b>	3LK 0722	Tes F	tCode: E RunNo: 5	PA Method 0722	8260: Volatile	es Short L	ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date:	Samp1 Batcl Analysis D	Type: ME n ID: R5 Date: 4/	3LK 0722 20/2018	Tes F S	tCode: E RunNo: 5 SeqNo: 1	PA Method 0722 646080	8260: Volatile Units: μg/L	es Short L	ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date: Analyte	SampT Batcl Analysis E Result	Type: <b>ME</b> n ID: <b>R5</b> Date: <b>4</b> / PQL	BLK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 60722 646080 LowLimit	<b>8260: Volatile</b> Units: μg/L HighLimit	es Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene	SampT Batcl Analysis D Result ND	Type: ME In ID: R5 Date: 4/ PQL 1.0	3LK 10722 20/2018 SPK value	Tes F S SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 50722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit	es Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene	SampT Batcl Analysis E Result ND ND	Type: ME n ID: R5 Date: 4/ PQL 1.0 1.0	BLK 0722 20/2018 SPK value	Tes F S SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 60722 646080 LowLimit	8260: Volatile Units: µg/L HighLimit	s Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene	SampT Batcl Analysis D Result ND ND ND	Type: ME In ID: R5 Date: 4/ PQL 1.0 1.0 1.0	3LK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 GeqNo: 1 %REC	PA Method 60722 646080 LowLimit	<b>8260: Volatile</b> Units: μ <b>g/L</b> HighLimit	es Short L %RPD	<b>ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE)	SampT Batcl Analysis E Result ND ND ND ND	ype: ME Date: 4/ PQL 1.0 1.0 1.0 1.0	3LK 10722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method i0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit	%RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE) Xylenes, Total	SampT Batcl Analysis D Result ND ND ND ND ND	ype: <b>MF</b> Date: <b>4/</b> PQL 1.0 1.0 1.0 1.0 1.0 1.0	3LK 10722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method i0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit	%RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE) Xylenes, Total Sur: 4-Bromofluorobenzene	SampT Batcl Analysis D Result ND ND ND ND ND ND	Type:         ME           n ID:         R5           Date:         4/           PQL         1.0           1.0         1.0           1.0         1.0           1.0         1.0	3LK 0722 20/2018 SPK value 10.00	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC 113	PA Method i0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit 130	%RPD	<b>.ist</b> RPDLimit	Qual

#### **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
- PQL Practical Quanitative Limit
- 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

Page 2 of 2

HALL Hall Environment ENVIRONMENTAL ANALYSIS LABORATORY TEL: 505-345-39 Website: www.	tal Analysis Laborai 4901 Hawkins Ibuquerque, NM 87 75 FAX: 505-345-4 hallenvironmental.o	NE 109 <b>Sample Log-In Check List</b> 107 com
Client Name: ANDEAVOR BLOOMFIEL Work Order Number	er: 1804A81	RcptNo: 1
		- <b>)</b>
Received By:         Isaiah Ortiz         4/19/2018 7:15:00 A	M	IG
Completed By: Michelle Garcia 4/19/2018 4:21:53 P	M	Michelle Garria
Reviewed By: UNO 4/14/18 LB:ENM		
Chain of Custody		
1. Is Chain of Custody complete?	Yes 🗹	No 🗌 Not Present 🗌
2. How was the sample delivered?	Courier	
<u>Log In</u>		
3. Was an attempt made to cool the samples?	Yes 🗹	No 🗌 NA 🗍
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🔽	No 🗌 NA 🗌
5. Sample(s) in proper container(s)?	Yes 🗹	Νο
6. Sufficient sample volume for indicated test(s)?	Yes 🗹	Νο
7. Are samples (except VOA and ONG) properly preserved?	Yes 🗹	No 🗔
8. Was preservative added to bottles?	Yes	No 🗹 NA 🗔
9. VOA vials have zero headspace?	Yes 🔽	No 🗌 No VOA Viais 🗌
10. Were any sample containers received broken?	Yes	No 🗹 # of preserved
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No for pH:
12. Are matrices correctly identified on Chain of Custody?	Yes 🗹	No Adjusted?
13. Is it clear what analyses were requested?	Yes 🗹	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes 🗹	
Special Handling (if applicable)	· •	
15. Was client notified of all discrepancies with this order?	Yes 🗌	No 🗌 NA 🗹
Person Notified:		
By Whom: Via:	eMail Ph	one 🗍 Fax 🗍 In Person
Regarding:		
Client Instructions:		
16. Additional remarks:		
17. <u>Cooler Information</u> <u>Cooler No</u> Temp <sup>o</sup> C Condition Seal Intact Seal No 1 0.4 Good Yes	Seal Date	Signed By

Ś	1	.>	ŗ							ίN μ	o ک	) səlqqn	Air B										_		tes.			
ner/																									Analy			
U U				60																					 get /			
N				. 871(	107				<u> </u>	(\		-111190)	0/70	-							$\rightarrow$			-	Tar			
			l con	NN	345-4	est	١٨	uo ∃8	atm,	Xa:	ເສ (າ	40V) 8	0208	×					_		-	+	+	+	and			
		¥ _	nenta	erque	505-	Sequ	s	SCB,	1 280	)8 /	səp	Pestici	1808					+				+	+	╈	spo			
			ironr	nonc	Fax	/sis	(†	70S'*	<sup>з</sup> 'ЬО	ON'	۶ON	,ID,A) sr	ioinA												Meth			
	Ī	Ĭ		٦¥		Analy					sls	təM 8 A	яся												call			
			h M	Ш И	3975			(9	SMIS	027	28 TO	(8310 <	ЫАЯ										_		alyti			
			≶ 	wkins	-345				(	1 't'	9 9 P 1 + 1	ontew)	EDB	<u> </u>				-+					+	+	e An			
				1 Ha	. 505		(C	NR(	<u>ุ</u> วิชิด	1/O	<u>หย</u> )	89108	HdT					+			-		+	┼╴	-Ne			
				490	Tel		(/	، oul	se9)	Нd	T+3	атм+х	(JT8												larks:			
	<b>.</b>							(120	)8)s,	ЯM	<u></u> +Ξ	IATM+X	BTE)												Rem			
												-																
													Ň.	00											Time		2	
			ഗ		t l						100	EAL P	04A	)											, dte		2	
			Nell	0	Eve		ains			ב  מ פ		Š	20													N 5	Ť	
		ush_	ery		Inal		H uế			Tay	MC	tive C													.	4 3		
	e.		efin	5	Anr	<u>ن</u>	Alle					serve	l ype	HCI												1 191		
	d Tin	Q	Je: R	기	emi	2326	lager		F	= 2		- Hu		5												IA	1	
	roun	andar	t Nan		t #: S	1262	t Mar				e Ter	ainer	and #	-A0/											i by:	N <u>s</u> c	Í	
	urn-⊿	X Sta	rojec	ate:	rojec	#0	rojec					Cont	ype	0ml \											sceived			
					<u> </u>				<u></u> ि	<u>)   C</u>				4						_				+-	<u>~~</u> ``	×		
	ē	าลไ					L.COL		datior			stID															ŧ	
	CO CO	rmi			413		avoi		l Vali			eute	- - -	-52												1 2	Š	
	Re	d Te			N 87.		Ande		: (Ful			e Ré		MW.												) P. (	3	
	dy	fiel		0	NN.	83	S@/	Ĩ	svel 4				-													-		
	istc	oon		495	field	4-14	Hair		×			ഗ്													λq p.		YPV	
	- v	8.		) CR	.uo	5-53	en.S.					atrix		2 0													<i><b>M</b></i>	
	<u>ٻ</u>	avol		s: <b>5</b> 1	ы	91	All				) 	Ľ Š		T		$\square$					_			_	Relin		°₽⊃	,
	ain	Inde	İ	ddres			ax#:	ckage	pr	1002	13441	Time		202											li l			
	บี	nt: A		ing A		ne #:	il or F	ac Pa	itand:		, L	<u>.</u>		180	$\neg$	-	-		$\dashv$		+			+				
		Clie		Mail		Pho	ema	QAC			L	Dai		4/18/											Date:	Date	<b>+</b> ₄	

ļ



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

April 24, 2018

Allen Hains Andeavor 50 CR 4990 Bloomfield, NM 87413 TEL: (505) 801-5616 FAX

RE: Cross Gradient Wells 4 18 18

OrderNo.: 1804A83

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/19/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109
# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor

**Project:** Cross Gradient Wells 4 18 18

Client Sample ID: MW-1 Collection Date: 4/18/2018 8:30:00 AM

Lab ID: 1804A83-001	Matrix:	AQUEOUS	Received I	Date: 4/19/2	018 7:15:00 AM
Analyses	Result	PQL Qua	l Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE					Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	4/23/2018 6:24:20 PM
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/23/2018 6:24:20 PM
Surr: DNOP	113	79.2-146	%Rec	1	4/23/2018 6:24:20 PM
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/20/2018 4:07:30 PM
Surr: BFB	89.3	69.3-150	%Rec	1	4/20/2018 4:07:30 PM
EPA METHOD 8260: VOLATILES SHOP	RT LIST				Analyst: AG
Benzene	ND	1.0	µg/L	1	4/20/2018 3:34:15 PM
Toluene	ND	1.0	µg/L	1	4/20/2018 3:34:15 PM
Ethylbenzene	ND	1.0	µg/L	1	4/20/2018 3:34:15 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/20/2018 3:34:15 PM
Xylenes, Total	ND	1.5	µg/L	1	4/20/2018 3:34:15 PM
Surr: 4-Bromofluorobenzene	114	70-130	%Rec	1	4/20/2018 3:34:15 PM
Surr: Toluene-d8	101	70-130	%Rec	1	4/20/2018 3:34:15 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 4
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Andeavor

Project: Cross G	radient We	lls 4 18	18							
Sample ID LCS-37746	SampT	ype: LC	S	Tes	tCode: E	PA Method	8015D: Diese	el Range		
Client ID: LCSW	Batcl	h ID: 37	746	F	RunNo: 5	0757				
Prep Date: 4/23/2018	Analysis E	Date: 4/	23/2018	S	SeqNo: 1	647226	Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.8	0.40	2.500	0	111	76.5	158			
Surr: DNOP	0.25		0.2500		100	79.2	146			
Sample ID MB-37746	SampT	уре: МЕ	BLK	Tes	tCode: E	PA Method	8015D: Diese	el Range		
Client ID: PBW	Batcl	h ID: 37	746	F	RunNo: 5	0757				
Prep Date: 4/23/2018	Analysis E	Date: 4/	23/2018	S	SeqNo: 1	647227	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 40								
<b>a a i i</b>	ND	0.10								
Motor Oil Range Organics (MRO)	ND	2.5								

#### **Qualifiers:**

**Client:** 

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 2 of 4

Client:	Andeavor									
Project: (	Cross Gradient W	ells 4 18	18							
Sample ID RB	Sam	oType: <b>M</b>	BLK	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBW	Ba	ch ID: As	50729	F	RunNo: 5	0729				
Prep Date:	Analysis	Date: 4	/20/2018	S	SeqNo: 1	645982	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	17		20.00		84.5	69.3	150			
Sample ID 2.5UG G	RO LCS Sam	oType: LC	cs	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSW	Bat	ch ID: A	50729	F	RunNo: 5	0729				
Prep Date:	Analysis	Date: 4	/20/2018	S	SeqNo: 1	645983	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	103	79.5	127			
Surr: BFB	20		20.00		100	69.3	150			

- \* 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
- PQL Practical Quanitative Limit
- 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

### Page 3 of 4

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#: 1804A83 24-Apr-18

#### Client: Andeavor

Project: Cross Gradient Wells 4 18 18

Sample ID 100ng lcs	SampType: LCS4 TestCode: EPA Method 8260: Volatiles Short List									
Client ID: BatchQC	Batch	n ID: <b>R5</b>	0722	F	RunNo: 5	0722				
Prep Date:	Analysis D	Date: 4/	20/2018	S	SeqNo: 1	646068	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.6	80	120			
Toluene	21	1.0	20.00	0	104	80	120			
Ethylbenzene	21	1.0	20.00	0	104	80	120			
Methyl tert-butyl ether (MTBE)	18	1.0	20.00	0	91.3	80	120			
Xylenes, Total	62	1.5	60.00	0	104	80	120			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			
Sample ID <b>rb</b>	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8260: Volatile	es Short L	.ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b>	SampT Batch	ype: <b>ME</b> 1 ID: <b>R5</b>	3LK 0722	Tes F	tCode: E RunNo: 5	PA Method 0722	8260: Volatile	es Short L	ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date:	SampT Batch Analysis D	<sup>-</sup> ype: <b>ME</b> n ID: <b>R5</b> Date: <b>4/</b>	3LK 0722 20/2018	Tes F S	tCode: E RunNo: 5 SeqNo: 1	PA Method 0722 646080	8260: Volatile Units: μg/L	es Short L	ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date: Analyte	SampT Batch Analysis D Result	<sup>-</sup> ype: <b>ME</b> n ID: <b>R5</b> Date: <b>4/</b> PQL	3LK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	<b>8260: Volatile</b> Units: μg/L HighLimit	es Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene	SampT Batch Analysis D Result ND	<sup>-</sup> ype: <b>ME</b> n ID: <b>R5</b> Date: <b>4/</b> PQL 1.0	BLK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit	es Short L %RPD	<b>ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene	SampT Batch Analysis D Result ND ND	Type: <b>ME</b> n ID: <b>R5</b> Date: <b>4/</b> PQL 1.0 1.0	BLK 0722 20/2018 SPK value	Tes F S SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	8260: Volatile Units: µg/L HighLimit	es Short L %RPD	<b>ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene	SampT Batch Analysis D Result ND ND ND	Type: <b>ME</b> In ID: <b>R5</b> Date: <b>4</b> / PQL 1.0 1.0 1.0	3LK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 GeqNo: 1 %REC	PA Method 0722 646080 LowLimit	<b>8260: Volatile</b> Units: μ <b>g/L</b> HighLimit	%RPD	<b>ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE)	SampT Batch Analysis D Result ND ND ND ND	Type: ME n ID: R5 Date: 4/ PQL 1.0 1.0 1.0 1.0	3LK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	<b>8260: Volatile</b> Units: μ <b>g/L</b> HighLimit	%RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE) Xylenes, Total	SampT Batch Analysis D Result ND ND ND ND ND ND	ype: <b>ME</b> n ID: <b>R5</b> Date: <b>4</b> / PQL 1.0 1.0 1.0 1.0 1.0 1.5	3LK 0722 20/2018 SPK value	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC	PA Method 0722 646080 LowLimit	<b>8260: Volatile</b> Units: <b>μg/L</b> HighLimit	%RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE) Xylenes, Total Surr: 4-Bromofluorobenzene	SampT Batch Analysis D Result ND ND ND ND ND ND ND	ype: <b>ME</b> n ID: <b>R5</b> Date: <b>4</b> / PQL 1.0 1.0 1.0 1.0 1.5	3LK 0722 20/2018 SPK value 10.00	Tes F SPK Ref Val	tCode: E RunNo: 5 SeqNo: 1 %REC 113	PA Method 0722 646080 LowLimit	8260: Volatile Units: μg/L HighLimit 130	%RPD	<b>.ist</b> RPDLimit	Qual

#### **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
- PQL Practical Quanitative Limit
- 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
- Page 4 of 4

### HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: ANDEAVOR BLOOMFIEL Work Order Number	er: 1804A83		RcptNo: 1	
のフィッ Received By: Isaiah Ortiz 4/19/2018.2:15:00 P	M 4-20-1K	Iat		
Completed By: Michelle Garcia 4/19/2018 4:37:26 P	M	Minul Carria		•
Reviewed By: Tho 4/19/18				•
LB FNM	÷		a de la companya de la	al de la constante de la const
Chain of Custody				· -
1. Is Chain of Custody complete?	Yes 🗹	No 🗌 No	ot Present	
2 How was the sample delivered?	Courier			- 
			· ·	
Log In			· · · · ·	
3. Was an attempt made to cool the samples?	Yes 🗹 -	No 🛄		
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🔽	No 🗌		-
5. Sample(s) in proper container(s)?	Yes 🗹	No	. •	
6 Sufficient sample volume for indicated test(s)?	Yes 🗹	No 🗌		
7 Are samples (except VOA and ONG) properly preserved?	Yes 🔽	No 🗔		
8. Was preservative added to bottles?	Yes	No 🔽	NA 🗌	
9. VOA vials have zero headspace?	Yes 🗹	No 🗌 🛛 No V	′OA Vials 🗌	
0. Were any sample containers received broken?	Yes	No 🗹 🛛 # of i	preserved	
1. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🔽	No Dottle	es checked H: (<2 on/>)	unlese noted)
2. Are matrices correctly identified on Chain of Custody?	Yes 🗹	No 🗌	Adjusted?	
3. Is it clear what analyses were requested?	Yes 🗹	No 🗌	K	-
4. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes 🗹	No 🗌	Checked by:	
Special Handling (if applicable)	÷			,
15. Was client notified of all discrepancies with this order?	Yes	No 🗌	NA 🗹	
Person Notified: Date				
By Whom: Via:	🗌 eMail 📋 P	hone 🔄 Fax 🗌 In	Person	
Regarding:				
Client Instructions:		··· ·· ··		- -
16. Additional remarks:				
17. Cooler Information				
Cooler No Temp C Condition Seal Intact Seal No	Seal Date	Signed By		
1 0.4 Good Yes				

, , , , , , , , , , , , , , , , , , ,									(	NJC	ν <i>ν</i> )	Air Bubbles				 					 t Analytes.		
1				109	~											 			_		 argei		
7		į	Ę	M 87	410					(\	0^-	im92) 0728	-			 			-		 d Ta		
	Q		tal.cc	le N	-345	uest	Λju	BE of	TM ()	хэт	a (A	0V) 80928	×								s an		
		5 0	men	nerqu	505	Req	s	PCB'	280	8/9	səbi	oitee9 1808									pou		
	Ź		viron	Ibndl	Fax	lysis	<sup>1</sup> )	Anions (F,CI,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )											Met				
	L _		allen	۲	ភ	Ana	_	RCRA 8 Metals						 	 				 tical				
			h.ww	s NE	-397			(5		070 070	01 9 01 9	PAH (8310									 naly		
		Ì	}	wkin	5-345				(	1.81	7 D(					 	 	-		_	 ie Al		
				1 Ha	1. 505		(0	NMR(	סאס	105	(ei	89108 H9T	×	×				_	_		s.		
				490	Te		۸)	lno s	eD)	Hd.	L+∃9	втех+мтв			 						 arks		
								(120	3) s,	ami	L+38	втм+хэта									Rem		
( .			adient Wells	0	Event		ains				-0.2 (r) n.4	HEAL NO. 1804 ASS	001								Date Time	International Time	-
	Time:	Rush	: Cross-Gra	4-18-1	mi-Annual	1266	ger: Allen Ha		Tuon Dove	Prince and	perature: 0,6	Preservative Type	HCI	Neat							Walt	r A	
	Turn-Around	X Standard	Project Name	Date:	Project #: Se	PO# 12623	Project Mana		Compler	On Ice	Sample Tem	Container Type and #	40ml VOA-5	250 ml amber-1							Received by:	Received by:	
	stody Record	oomfield Terminal		4990	ield, NM 87413	4-1483	Hains@Andeavor.com		A Level 4 (Full Validation)			Sample Request ID	MW-1	MW-1							d by:	d by: The Walles	
	of-Cu	vor - Bl		50 CR	Bloomf	915-534	Allen.S.			EXCEL		Matrix	H <sub>2</sub> O	H <sub>2</sub> O				_			Relinquishe	Relinquishe	
(	hain-	Andea		Address		#:	r Fax#:	Package:	idard	(Tvne)		Time	0830	~							Time: 1415	Time: الالالال	
	0	Client:		Mailing		Phone	email o	QAQC				Date	4/1.9/18	$\rightarrow$							Date:	Date: 1/5/15	-



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

April 24, 2018

Allen Hains Andeavor 111 CR 4990 Bloomfield, NM 87413 TEL: (505) 801-5616 FAX

RE: Downgradient/NBB Observation Wells

OrderNo.: 1804A98

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 8 sample(s) on 4/20/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Project: Downgradient/NBB Observation Wells

**CLIENT:** Andeavor

Client Sample ID: MW-38 Collection Date: 4/19/2018 8:40:00 AM Beceived Date: 4/20/2018 7:55:00 AM

Lab ID: 1804A98-001	Matrix:	AQUEOUS	<b>Received</b>	Date: 4/20/20	018 7:55:00 AM
Analyses	Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE					Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	4/23/2018 6:48:17 PM
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/23/2018 6:48:17 PM
Surr: DNOP	113	79.2-146	%Rec	1	4/23/2018 6:48:17 PM
EPA METHOD 8015D: GASOLINE RANG	θE				Analyst: NSB
Gasoline Range Organics (GRO)	0.058	0.050	mg/L	1	4/20/2018 10:43:26 PM
Surr: BFB	85.8	69.3-150	%Rec	1	4/20/2018 10:43:26 PM
EPA METHOD 8260: VOLATILES SHOR	T LIST				Analyst: AG
Benzene	ND	1.0	µg/L	1	4/23/2018 3:39:40 PM
Toluene	ND	1.0	µg/L	1	4/23/2018 3:39:40 PM
Ethylbenzene	ND	1.0	µg/L	1	4/23/2018 3:39:40 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/23/2018 3:39:40 PM
Xylenes, Total	ND	1.5	µg/L	1	4/23/2018 3:39:40 PM
Surr: 4-Bromofluorobenzene	112	70-130	%Rec	1	4/23/2018 3:39:40 PM
Surr: Toluene-d8	101	70-130	%Rec	1	4/23/2018 3:39:40 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 12
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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.

Project: Downgradient/NBB Observation Wells

**CLIENT:** Andeavor

Client Sample ID: MW-37WellsCollection Date: 4/19/2018 9:00:00 AMMatrix: AOUEOUSReceived Date: 4/20/2018 7:55:00 AM

Lab ID: 1804A98-002	Matrix:	AQUEOUS	<b>Received</b>	Date: 4/20/20	te: 4/20/2018 7:55:00 AM DF Date Analyzed Analyst: TOM 1 4/23/2018 7:12:21 PM 1 4/23/2018 7:12:21 PM				
Analyses	Result	PQL Qual	Units	DF	Date Analyzed				
EPA METHOD 8015D: DIESEL RANGE					Analyst: TOM				
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	4/23/2018 7:12:21 PM				
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/23/2018 7:12:21 PM				
Surr: DNOP	112	79.2-146	%Rec	1	4/23/2018 7:12:21 PM				
EPA METHOD 8015D: GASOLINE RANG	θE				Analyst: NSB				
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/20/2018 11:06:50 PM				
Surr: BFB	87.0	69.3-150	%Rec	1	4/20/2018 11:06:50 PM				
EPA METHOD 8260: VOLATILES SHOR	T LIST				Analyst: AG				
Benzene	ND	1.0	µg/L	1	4/23/2018 4:48:58 PM				
Toluene	ND	1.0	µg/L	1	4/23/2018 4:48:58 PM				
Ethylbenzene	ND	1.0	µg/L	1	4/23/2018 4:48:58 PM				
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/23/2018 4:48:58 PM				
Xylenes, Total	ND	1.5	µg/L	1	4/23/2018 4:48:58 PM				
Surr: 4-Bromofluorobenzene	109	70-130	%Rec	1	4/23/2018 4:48:58 PM				
Surr: Toluene-d8	92.9	70-130	%Rec	1	4/23/2018 4:48:58 PM				

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 12
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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.

**Project:** Lab ID:

**CLIENT:** Andeavor Client Sample ID: MW-12 Downgradient/NBB Observation Wells Collection Date: 4/19/2018 9:40:00 AM 1804A98-003 Matrix: AQUEOUS **Received Date:** 4/20/2018 7:55:00 AM Result PQL Qual Units DF **Date Analyzed** 

Analyses	lyses Result PQL Qual Units				Date Analyzed
EPA METHOD 8015D: DIESEL RAN	GE				Analyst: TOM
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	4/23/2018 7:36:15 PM
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/23/2018 7:36:15 PM
Surr: DNOP	104	79.2-146	%Rec	1	4/23/2018 7:36:15 PM
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/20/2018 11:29:59 PM
Surr: BFB	87.9	69.3-150	%Rec	1	4/20/2018 11:29:59 PM
EPA METHOD 8260: VOLATILES SH	HORT LIST				Analyst: AG
Benzene	ND	1.0	µg/L	1	4/23/2018 5:12:05 PM
Toluene	ND	1.0	µg/L	1	4/23/2018 5:12:05 PM
Ethylbenzene	ND	1.0	µg/L	1	4/23/2018 5:12:05 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/23/2018 5:12:05 PM
Xylenes, Total	ND	1.5	µg/L	1	4/23/2018 5:12:05 PM
Surr: 4-Bromofluorobenzene	114	70-130	%Rec	1	4/23/2018 5:12:05 PM
Surr: Toluene-d8	97.3	70-130	%Rec	1	4/23/2018 5:12:05 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 12
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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.

Downgradient/NBB Observation Wells

**CLIENT:** Andeavor

Project: Lab ID:

Client Sample ID: Rinsate Blank Collection Date: 4/19/2018 10:00:00 AM **Received Date:** 4/20/2018 7:55:00 AM

Lab ID: 1804A98-004	Matrix:	AQUEOUS	Received I	Date: 4/20/2	018 7:55:00 AM
Analyses	Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE					Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	4/23/2018 8:00:12 PM
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/23/2018 8:00:12 PM
Surr: DNOP	106	79.2-146	%Rec	1	4/23/2018 8:00:12 PM
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/20/2018 11:53:22 PM
Surr: BFB	90.7	69.3-150	%Rec	1	4/20/2018 11:53:22 PM
EPA METHOD 8260: VOLATILES SHOR	T LIST				Analyst: AG
Benzene	ND	1.0	µg/L	1	4/23/2018 2:53:35 PM
Toluene	ND	1.0	µg/L	1	4/23/2018 2:53:35 PM
Ethylbenzene	ND	1.0	µg/L	1	4/23/2018 2:53:35 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/23/2018 2:53:35 PM
Xylenes, Total	ND	1.5	µg/L	1	4/23/2018 2:53:35 PM
Surr: 4-Bromofluorobenzene	116	70-130	%Rec	1	4/23/2018 2:53:35 PM
Surr: Toluene-d8	100	70-130	%Rec	1	4/23/2018 2:53:35 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 12
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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.

Downgradient/NBB Observation Wells

**CLIENT:** Andeavor

Project:

Client Sample ID: Field Blank Collection Date: 4/19/2018 10:10:00 AM Received Date: 4/20/2018 7:55:00 AM

Lab ID: 1804A98-005	Matrix:	AQUEOUS	Received <b>E</b>	Date: 4/20/2	018 7:55:00 AM
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANG	E				Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	4/23/2018 8:24:12 PM
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/23/2018 8:24:12 PM
Surr: DNOP	106	79.2-146	%Rec	1	4/23/2018 8:24:12 PM
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/21/2018 12:16:44 AM
Surr: BFB	84.9	69.3-150	%Rec	1	4/21/2018 12:16:44 AM
EPA METHOD 8260: VOLATILES SH	ORT LIST				Analyst: AG
Benzene	ND	1.0	µg/L	1	4/23/2018 3:16:40 PM
Toluene	ND	1.0	µg/L	1	4/23/2018 3:16:40 PM
Ethylbenzene	ND	1.0	µg/L	1	4/23/2018 3:16:40 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/23/2018 3:16:40 PM
Xylenes, Total	ND	1.5	µg/L	1	4/23/2018 3:16:40 PM
Surr: 4-Bromofluorobenzene	116	70-130	%Rec	1	4/23/2018 3:16:40 PM
Surr: Toluene-d8	99.9	70-130	%Rec	1	4/23/2018 3:16:40 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 12
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

**Analytical Report** 

# Hall Environmental Analysis Laboratory, Inc.

Lab Order 1804A98 Date Reported: 4/24/2018

CLIENT: Andeavor			<b>Client Sample</b>	e <b>ID:</b> Trip B	lank
Project: Downgradient/NBB Obser	vation Wells		Collection I	Date:	
Lab ID: 1804A98-006	Matrix:	AQUEOUS	Received I	Date: 4/20/2	018 7:55:00 AM
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE F	RANGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/21/2018 12:40:01 AM
Surr: BFB	89.7	69.3-150	%Rec	1	4/21/2018 12:40:01 AM
EPA METHOD 8260: VOLATILES S	HORT LIST				Analyst: AG
Benzene	ND	1.0	µg/L	1	4/23/2018 5:35:10 PM
Toluene	ND	1.0	µg/L	1	4/23/2018 5:35:10 PM
Ethylbenzene	ND	1.0	µg/L	1	4/23/2018 5:35:10 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/23/2018 5:35:10 PM
Xylenes, Total	ND	1.5	µg/L	1	4/23/2018 5:35:10 PM
Surr: 4-Bromofluorobenzene	113	70-130	%Rec	1	4/23/2018 5:35:10 PM
Surr: Toluene-d8	97.8	70-130	%Rec	1	4/23/2018 5:35:10 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 12
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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.

Downgradient/NBB Observation Wells

**CLIENT:** Andeavor

Project:

Client Sample ID: OW 3+85 Collection Date: 4/19/2018 11:15:00 AM Received Date: 4/20/2018 7:55:00 AM

Lab ID: 1804A98-007	Matrix:	AQUEOUS	Received I	Date: 4/20/2	018 7:55:00 AM
Analyses	Result	PQL Qua	al Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE					Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	7.9	0.40	mg/L	1	4/23/2018 8:48:15 PM
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/23/2018 8:48:15 PM
Surr: DNOP	102	79.2-146	%Rec	1	4/23/2018 8:48:15 PM
EPA METHOD 8015D: GASOLINE RANG	θE				Analyst: NSB
Gasoline Range Organics (GRO)	3.7	0.050	mg/L	1	4/21/2018 1:03:25 AM
Surr: BFB	1380	69.3 <b>-</b> 150 S	S %Rec	1	4/21/2018 1:03:25 AM
EPA METHOD 8260: VOLATILES SHOR	T LIST				Analyst: AG
Benzene	ND	1.0	µg/L	1	4/23/2018 5:58:15 PM
Toluene	ND	1.0	µg/L	1	4/23/2018 5:58:15 PM
Ethylbenzene	ND	1.0	µg/L	1	4/23/2018 5:58:15 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/23/2018 5:58:15 PM
Xylenes, Total	ND	1.5	µg/L	1	4/23/2018 5:58:15 PM
Surr: 4-Bromofluorobenzene	102	70-130	%Rec	1	4/23/2018 5:58:15 PM
Surr: Toluene-d8	98.6	70-130	%Rec	1	4/23/2018 5:58:15 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 12
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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.

Downgradient/NBB Observation Wells

**CLIENT:** Andeavor

Project:

Client Sample ID: OW 25+70 Collection Date: 4/19/2018 1:40:00 PM Received Date: 4/20/2018 7:55:00 AM

Lab ID: 1804A98-008	Matrix:	AQUEOUS	Received I	Date: 4/20/2	018 7:55:00 AM
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANG	Ε				Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	4/23/2018 9:12:22 PM
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/23/2018 9:12:22 PM
Surr: DNOP	116	79.2-146	%Rec	1	4/23/2018 9:12:22 PM
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	0.10	0.050	mg/L	1	4/21/2018 1:50:08 AM
Surr: BFB	86.8	69.3-150	%Rec	1	4/21/2018 1:50:08 AM
EPA METHOD 8260: VOLATILES SH	ORT LIST				Analyst: AG
Benzene	ND	1.0	µg/L	1	4/23/2018 6:44:20 PM
Toluene	ND	1.0	µg/L	1	4/23/2018 6:44:20 PM
Ethylbenzene	ND	1.0	µg/L	1	4/23/2018 6:44:20 PM
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/23/2018 6:44:20 PM
Xylenes, Total	ND	1.5	µg/L	1	4/23/2018 6:44:20 PM
Surr: 4-Bromofluorobenzene	113	70-130	%Rec	1	4/23/2018 6:44:20 PM
Surr: Toluene-d8	95.5	70-130	%Rec	1	4/23/2018 6:44:20 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 8 of 12
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Client:	Andeavor										
Project:	Downgradie	nt/NBB	Obser	vation Well	S						
Sample ID LCS-3	Sample ID LCS-37746 SampType: LCS TestCode: EPA Method 8015D: Diesel Range										
Client ID: LCSW		Batch	ID: <b>37</b>	746	F	RunNo: 5	0757				
Prep Date: 4/23/2	2 <b>018</b> Ar	nalysis Da	ite: 4/	23/2018	SeqNo: 1647226 Units: mg/L						
Analyte	F	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics	(DRO)	2.8	0.40	2.500	0	111	76.5	158			
Surr: DNOP		0.25		0.2500		100	79.2	146			
Sample ID MB-37	746	SampTy	pe: ME	BLK	Tes	tCode: El	PA Method	8015D: Diese	l Range		
Client ID: PBW		Batch	ID: 37	746	F	RunNo: 5	0757				
Prep Date: 4/23/2	2 <b>018</b> Ar	nalysis Da	ite: 4/	23/2018	5	SeqNo: 1	647227	Units: mg/L			
Analyte	F	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics	(DRO)	ND	0.40								
Motor Oil Range Organi	cs (MRO)	ND	2.5								
Surr: DNOP		0.55		0.5000		110	79.2	146			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 9 of 12

Client: Ande	avor									
Project: Down	ngradient/NBE	B Observ	vation Well	S						
Sample ID RB	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	е	
Client ID: PBW	Batcl	h ID: <b>A5</b>	0729	F	RunNo: 5	0729				
Prep Date:	Analysis E	Date: 4/	20/2018	5	SeqNo: 1	645982	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		84.5	69.3	150			
Sample ID 2.5UG GRO L	.CS Samp1	ype: LC	s	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSW	Batcl	h ID: A5	0729	F	RunNo: 5	0729				
Prep Date:	Analysis D	Date: 4/	20/2018	5	SeqNo: 1	645983	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	103	79.5	127			
Surr: BFB	20		20.00		100	69.3	150			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 10 of 12

Client: Andeavor	r diant/NDT	Ohaam		_						
Project: Downgra										
Sample ID 100ng Ics	Sampl	ype: LC	54	les	tCode: E	PA Method	8260: Volatile	es Short L	.ist	
Client ID: BatchQC	Batcl	h ID: <b>R5</b>	0782	F	RunNo: 5	0782				
Prep Date:	Analysis D	Date: 4/	23/2018		SeqNo: 1	647245	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.2	80	120			
Toluene	20	1.0	20.00	0	99.0	80	120			
Ethylbenzene	20	1.0	20.00	0	101	80	120			
Methyl tert-butyl ether (MTBE)	19	1.0	20.00	0	94.5	80	120			
Xylenes, Total	59	1.5	60.00	0	98.2	80	120			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			
Sample ID 1804a98-001ams	SampT	уре: М	64	Tes	tCode: E	PA Method	8260: Volatile	es Short L	ist	
Client ID: MW-38	Batcl	h ID: R5	0782	F	RunNo: 5	0782				
Prep Date:	Analysis D	Date: 4/	23/2018	S	SeqNo: 1	647247	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.9	80	120			
Toluene	21	1.0	20.00	0	104	80	120			
Ethylbenzene	21	1.0	20.00	0.1510	104	80	120			
Methyl tert-butyl ether (MTBE)	18	1.0	20.00	0.6526	87.0	80	120			
Xylenes, Total	61	1.5	60.00	0.6312	101	80	120			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			
Sample ID 1804a98-001amsd	<b>I</b> SampT	уре: <b>М</b>	SD4	Tes	tCode: E	PA Method	8260: Volatile	es Short L	.ist	
Client ID: MW-38	Batcl	h ID: <b>R5</b>	0782	F	RunNo: 5	0782				
Prep Date:	Analysis E	Date: 4/	23/2018	S	SeqNo: 1	647248	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	93.6	80	120	4.46	20	
Toluene	20	1.0	20.00	0	98.7	80	120	4.80	20	
Ethylbenzene	20	1.0	20.00	0.1510	101	80	120	2.95	20	
Methyl tert-butyl ether (MTBE)	20	1.0	20.00	0.6526	97.1	80	120	10.6	20	
Xylenes, Total	60	1.5	60.00	0.6312	98.3	80	120	2.97	20	
Surr: 4-Bromofluorobenzene	9.6		10.00		95.8	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	70	130	0	0	
Sample ID rb	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8260: Volatile	es Short L	.ist	
Client ID: PBW	Batcl	h ID: R5	0782	F	RunNo: 5	0782				
Prep Date:	Analysis E	Date: 4/	23/2018	S	SeqNo: 1	647259	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								

\* 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

- PQL Practical Quanitative Limit
- 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
- Page 11 of 12

9.8

Client:	Andeavor										
Project:	Downgradien	nt/NBB	Observ	vation Well	s						
Sample ID rb		SampTy	ре: <b>МЕ</b>	BLK	Tes	tCode: El	PA Method	8260: Volatile	es Short L	.ist	
Client ID: PBW		Batch	ID: <b>R5</b>	0782	F	RunNo: 5	0782				
Prep Date:	Ana	alysis Da	ite: 4/	23/2018	S	SeqNo: 1	647259	Units: µg/L			
Analyte	R	esult	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene		ND	1.0								
Ethylbenzene		ND	1.0								
Methyl tert-butyl ether (MT	BE)	ND	1.0								
Xylenes, Total		ND	1.5								
Surr: 4-Bromofluoroben	zene	12		10.00		116	70	130			

98.4

70

130

10.00

#### **Qualifiers:**

Surr: Toluene-d8

- \* 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
- PQL Practical Quanitative Limit
- 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

Page 12 of 12



. ;

#### 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: ANDEAVOR BLOOMFIEL Work O	rder Number: 1804A98	, · · ·	RcptNo: 1
Received By: Anne Thorne 4/20/2018	7:55:00 AM	anne Han	
Completed By: Anne Thorne 4/20/2018	10:23:19 AM	anne Am	
Reviewed By: 04/20	0[18		
<u>Chain of Custody</u>			
1 Is Chain of Custody complete?	Yes 🗹	No	Not Present
2. How was the sample delivered?	Courier		
<u>Log In</u>			
3. Was an attempt made to cool the samples?	Yes 🗹	No 🗌	NA 🗌
4. Were all samples received at a temperature of $>0^{\circ}$ C to	6.0°C Yes 🗹	No 🗌	NA 🗍
5. Sample(s) in proper container(s)?	Yes 🗹	No 🗌	
6 Sufficient sample volume for indicated test(s)?	Yes 🗸	No	
7. Are samples (except VOA and ONG) properly preserved?	Yes 🗹	No 🗌	
8. Was preservative added to bottles?	Yes	No 🔽	NA 🗌
9. VOA vials have zero headspace?	Yes 🔽	No 🗌	No VOA Vials 🗌
10. Were any sample containers received broken?	Yes	No 🗹	# of preserved
			bottles checked
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ⊻	No 🗔	tor pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes 🗹	No 🗍	Adjusted?
13. Is it clear what analyses were requested?	Yes 🗸	No 🗌	
14. Were all holding times able to be met? (If no, notify customer for authorization)	Yes 🗹	No 🗍	Checked by:
Special Handling (if applicable)			
15. Was client notified of all discrepancies with this order?	Yes 🗌	No 🗌	NA 🗹
Person Notified:	Date 1		
By Whom:	Via: CeMail II	Phone Fax	
Regarding:			i
Client Instructions:			
16. Additional remarks:			<u> </u>
17. <u>Cooler Information</u>			
Cooler No Temp °C Condition Seal Intact S	Seal No Seal Date	Signed By	· · · · · · · · · · · · · · · · · · ·
1 1.0 Good Yes			

In-Acound Time:   deavor - Bloomfield Terminal   X Standard   X Standard   Condition   So CR 4990   Control   Project Name: Downgradient Wells   Make Name: Downgradient Wells   Control   Project Name: Downgradient Wells   Advance   Bloomfield, NM 87413   Project Name: Downgradient Wells   # Alterns Hame: Downgradient Wells   Bloomfield Terminal   # Alterns Hame: Taccy Payne   Sample Temperatur	Relinquished by Received by Received by I I   Prinquished by Nu, t, h, and t, g, h,
Of-Cus       Vor - Blo       Invor ation       Invortatin       Invortating <th>Relinquished</th>	Relinquished

<u>ы</u> С	TDONMENTAL	S LABORATORY	mental.com	Jerque, NM 87109	505-345-4107	Request	Λ <sub>l</sub> u	11BE 0	808 (N	s / s 3TE (A(	9bi; A (A DV-	0 <b>V) 8081 Pestid</b> 0 <b>V) 80828</b> im∋ <i>8</i> ) 0728 im∋ <i>8</i> ) 0728 im∋ <i>8</i> ) 0728	×		×							hods and Target Analytes.		
			www.hallenviror	4901 Hawkins NE - Albuq	Tel. 505-345-3975 Fax	Analysis	۹) ••) •)	200,400 (20,400) (20,400)	) H (() 150	118 204 257 504 504 504 504	1'NC ol { ol { 0	BTEX+MTE TPH 8015E TPH (Methd EDB (Methd PAH (8310 RCRA 8 Me RCRA 8 Me	×	×	×	×	X	×				aarks: See Analytical Me		
	urn-Around Time:	X Standard 🛛 Rush	roject Name: Downgradient Wells	late: <u>4 - 19 - 18</u>	roject #: Semi-Annual Event	PO# 12623266	roject Manager: Allen Hains	(1208)	ampler: Tracy Payne	n Ice: X Yes , □ No	ample Temperature. / O	Container Preservative HEAL No. X Type and # Type $I \& O H Q $	0mi voA-5 HCI -203	250 ml Neat 7.3	OMNOR-S HCL 204	ANBER-1 NEAT 204	QUILIDE HOL	ZHBER- NEAT -205	DALVOR3 HLL	· ·		eceived by: Date Time Ren Murther 10 - 4/9/1, 1030	egeived by Date All	
	F-Custody Record	or - Bloomfield Terminal	<u>d</u>	60 CR 4990	loomfield, NM 87413	I5-534-1483	len.S.Hains@Andeavor.com	X Level 4 (Full Validation)	S		S	latrix Sample Request ID	H <sub>2</sub> O MW-12 4	H <sub>2</sub> O MW-12	"O RINGATE BLANK 4	0 1	20 HOUTHENST BLANK	O LAFREDT	20 TRIPBLANK H			Receipted by:	Inquished by:	
·	Chain-of	Client: Andeavo		Mailing Address: 5	B	Phone #: 91	email or Fax#: All	QA/QC Package:	Other	X EDD (Type) E		Date Time M	4/9/8 CA40 F	-	1000 H	H 1 H	10 PT	キ   A	448 - Ha			Date: Time: Reli	Under Time: Kell	

	Å V							.1	(N	or	۲)	səjq	Air Bub							 			S.	
ЧО ПО ПО ПО ПО ПО ПО ПО ПО ПО ПО ПО ПО ПО			109	) )															· ·			· ·	 et Analyt	
7-	Ž		M 87	410					(	ΨC	<u>ک</u>	iməć	S) 0728				-			 			Targe	
	<u>0</u>		N N	-345	uest	۱y	no 3.	atw	I'X∃	ITε	I (A	ΌΛ)	80928	×									and	
	5,			202	Rec	s	CB.	85 6	08	/ S	əbi	oitee	9 1808										spo	
i			uniu Nbiid	ц Ц Ц	lysis	(	'0S' <sup>†</sup>	PO4,	ZON	1' <sup>e</sup> C	DN'I	(F,CI	snoinA	<u> </u>									Meth	
1				5	Ana		(		201	5 70	e lete	eM 8			•								ical P	
		10000	NWW	5-39				5041	(1.4	-09	; pc	urs Jethc	80 F V 0	<u> </u>									 Jalyt	
		(	awkir	5-34					(1.6	31t	7 pc	putal	M) H9T										se A	
			01 H	- 120 - 120		(c	)MR(	/0Y	a/c	)Я	อ) เ	891	08 HAT	×	×								ഗ്	
			49	Ĩ		(,	۸juo	se£	)Ha	٩T	9E+	ВТМ	BTEX+										nark	
	L L.			т.—			(12	08)s	NB/	٨T	+∃{	ATH	+X∃T8										 Rer	
	-	ervation Wells	8	Event		ains			Ъ	ON D	•		HEAL NO: 1804/198	EAS LOS	E02 602	Aroutella	-	r					Date Time לאהר זעאא	Date Time Date Time 04/20/17
Time:	□ Rush_	e: NBB-Obs	4 - 19 - 14	emi-Annual	3266	ager: Allen Ha	1		Tracy Payr	PT-Yes	perature: /. O		Type	НСІ	Neat								1. Jul	A WAND
Turn-Around	X Standard	Project Name	Date:	Project #: Se	PO# 1262:	Project Mana	'		Sampler:	On Ice:	Sample Tem		Type and #	40ml VOA-5	250 ml amber-1								Received by:	Received by:
stody Record	somfield Terminal		4990	ield, NM 87413	-1483	Hains@Andeavor.com		X Level 4 (Full Validation)					Sample Request ID	OW 3+85	OW 3+85				-					10); 1 0 -
-of-Cu	avor - Blo	-	s: <b>50 CR</b>	Bloomfi	915-534	Allen.S.I				EXCEL			Matrix	H <sub>2</sub> O	H <sub>2</sub> O								 Relinquished	Refinquished
hain.	Ande		Addres		#	r Fax#:	Package:	ıdard	۲   	(Type)			Time	1115	$\rightarrow$								Time: [ <b>100</b>	Time:
U	Client:		Mailing		Phone	email o	QA/QC	🗆 Star	C Otř	X EDC			Date	4/a/e	$\rightarrow$								Date:	Date: Ul, l,

<u>م</u> ٩			www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	   (ν (ν (ν (ν)	11BE ou 55 bCB W2) 50,4,50 W2)	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Prove the second	56++36 50d 4 50d 4 511/10 1/10 1/10 1/10 1/10 1/10 1/10 1/	TEX+MTE <b>B2108 Hq1</b> <b>TPH (Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b> <b>Method</b>	×							arks: See Analytical Methods and Target Analytes.		
			IBB - Observation Wells	(-19-18 4901 Hawi	i-Annual Event Tel. 505-3	)Q	r Allen Hains	(1208) (100 261)	acy Payne BS (C) PF (1)		ature: 1 - 0	TPH (Metho Eservative HEAL No. Type & TCH AG M O 4 A9 M O 4 A9 M O 4 A9 M D 4 A9	HCI 708 X	Neat ZC X						Date Time Remarks: See	Jucce (1/19/18	
	Turn-Around Tim	X Standard	Project Name: N	Date: 4	Project #: Semi	PO# 1262326	Project Manager:		Sampler: Tra	On Ice: The Contract of the Co	Sample Tempera	Container Pre Type and #	40ml VOA-5	250 ml amber-1						 Repeived by:	Received by:	X
	istody Record	loomfield Terminal		र 4990	field, NM 87413	4-1483	.Hains@Andeavor.com	X Level 4 (Full Validation)				Sample Request ID	OW 25+70	OW 25+70				-		ed by:	ed by:	
	-of-Cu	avor - B		s: 50 CF	Bloom	915-53	Allen.S.			EXCEL		Matrix	H <sub>2</sub> O	H <sub>2</sub> O			-			Relinquish		
	Chain	Ande		g Addres		;#:	or Fax#:	: Package: ndard	ler	D (Type)		Time	340	1340	 	 				Time:	Time:	> ?
		Client:		Mailinç		Phone	email (	QA/QC □ Sta	□ Oth	X EDI		Date	4/19/12							Upte:	Date: V I,q II	41.1



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

May 15, 2018

Allen Hains Andeavor 111 CR 4990 Bloomfield, NM 87413 TEL: (505) 801-5616 FAX

RE: NBB Observation/Collection Wells, Outfalls, San Juan River OrderNo.: 1804B65

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 9 sample(s) on 4/21/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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,

and

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

### Hall Environmental Analysis Laboratory, Inc.

NBB Observation/Collection Wells, Outf

**CLIENT:** Andeavor

**Project:** 

Client Sample ID: OW 22+00 Collection Date: 4/20/2018 8:45:00 AM Received Date: 4/21/2018 9:40:00 AM

Lab ID: 1804B65-001	Matrix:	AQUEOUS	<b>Received</b>	<b>Date:</b> 4/2	21/2018 9:40:00 AM	
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE					Analyst	том
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	4/26/2018 2:36:58 PM	37811
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/26/2018 2:36:58 PM	37811
Surr: DNOP	97.1	79.2-146	%Rec	1	4/26/2018 2:36:58 PM	37811
EPA METHOD 8015D: GASOLINE RAM	IGE				Analyst	AG
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/25/2018 1:25:01 PM	W50821
Surr: BFB	109	70-130	%Rec	1	4/25/2018 1:25:01 PM	W50821
EPA METHOD 8260: VOLATILES SHO	RT LIST				Analyst	AG
Benzene	ND	1.0	µg/L	1	4/25/2018 1:25:01 PM	A50821
Toluene	ND	1.0	μg/L	1	4/25/2018 1:25:01 PM	A50821
Ethylbenzene	ND	1.0	μg/L	1	4/25/2018 1:25:01 PM	A50821
Methyl tert-butyl ether (MTBE)	5.9	1.0	μg/L	1	4/25/2018 1:25:01 PM	A50821
Xylenes, Total	ND	1.5	μg/L	1	4/25/2018 1:25:01 PM	A50821
Surr: 4-Bromofluorobenzene	118	70-130	%Rec	1	4/25/2018 1:25:01 PM	A50821
Surr: Toluene-d8	102	70-130	%Rec	1	4/25/2018 1:25:01 PM	A50821

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

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
- PQL Practical Quanitative Limit
- 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 Page 1 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

NBB Observation/Collection Wells, Outf

**CLIENT:** Andeavor

Project:

Client Sample ID: CW 25+95 Collection Date: 4/20/2018 9:05:00 AM Pageived Date: 4/21/2018 9:40:00 AM

Lab ID: 1804B65-002	Matrix:	AQUEOUS	<b>Received</b>	<b>Date:</b> 4/2	21/2018 9:40:00 AM	
Analyses	Result	PQL Qua	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE					Analyst	том
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	4/26/2018 3:43:33 PM	37811
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	4/26/2018 3:43:33 PM	37811
Surr: DNOP	105	79.2-146	%Rec	1	4/26/2018 3:43:33 PM	37811
EPA METHOD 8260: VOLATILES SHORT	<b>LIST</b>				Analyst	AG
Benzene	ND	1.0	µg/L	1	4/25/2018 2:57:38 PM	A50821
Toluene	ND	1.0	µg/L	1	4/25/2018 2:57:38 PM	A50821
Ethylbenzene	ND	1.0	µg/L	1	4/25/2018 2:57:38 PM	A50821
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/25/2018 2:57:38 PM	A50821
Xylenes, Total	ND	1.5	µg/L	1	4/25/2018 2:57:38 PM	A50821
Surr: 4-Bromofluorobenzene	115	70-130	%Rec	1	4/25/2018 2:57:38 PM	A50821
Surr: Toluene-d8	102	70-130	%Rec	1	4/25/2018 2:57:38 PM	A50821

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
- PQL Practical Quanitative Limit
- 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 Page 2 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1804B65

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/15/2018

<b>CLIENT:</b>	Andeavor		Client Sample ID: TRIP BLANK						
Project:	NBB Observation/Collect	<b>Collection Date:</b>							
Lab ID:	1804B65-003	Matrix:	TRIP BLANK	Received	<b>Date:</b> 4/2	21/2018 9:40:00 AM			
Analyses		Result	PQL Qual	Units	DF	Date Analyzed	Batch		
EPA MET	HOD 8260: VOLATILES S	HORT LIST				Analyst	: AG		
Benzene		ND	1.0	µg/L	1	4/25/2018 3:43:57 PM	A50821		
Toluene		ND	1.0	µg/L	1	4/25/2018 3:43:57 PM	A50821		
Ethylben	zene	ND	1.0	µg/L	1	4/25/2018 3:43:57 PM	A50821		
Methyl te	ert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/25/2018 3:43:57 PM	A50821		
Xylenes,	Total	ND	1.5	µg/L	1	4/25/2018 3:43:57 PM	A50821		
Surr: 4	1-Bromofluorobenzene	111	70-130	%Rec	1	4/25/2018 3:43:57 PM	A50821		
Surr: 7	Foluene-d8	100	70-130	%Rec	1	4/25/2018 3:43:57 PM	A50821		

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

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
- PQL Practical Quanitative Limit
- 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 Page 3 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

(C . 11 . . . . .

337.11.

0 ...

. . . . .

**CLIENT:** Andeavor

D.....

Client Sample ID: Outfall #2 Collection Date: 4/20/2018 10:40:00 AM

<b>Project:</b> NDD Observation/Conection wens, Out				Conection Date: 4/20/2018 10:40:00 AM					
Lab ID: 1804B65-004	Matrix: AQUEOUS			Received Date: 4/21/2018 9:40:00 AM					
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch		
CARBON DIOXIDE						Analyst	: JRR		
Total Carbon Dioxide	330	1.0	Н	mg CO2/L	1	4/26/2018 3:55:15 PM	R50879		
SM2320B: ALKALINITY						Analyst	: JRR		
Bicarbonate (As CaCO3)	354.6	20.00		mg/L CaCO3	1	4/26/2018 3:55:15 PM	R50879		
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/26/2018 3:55:15 PM	R50879		
Total Alkalinity (as CaCO3)	354.6	20.00		mg/L CaCO3	1	4/26/2018 3:55:15 PM	R50879		
EPA METHOD 7470: MERCURY						Analyst	: rde		
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:16:58 AM	37815		
EPA METHOD 7470: MERCURY						Analyst	: rde		
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:19:20 AM	37815		
EPA METHOD 6010B: DISSOLVED M	<b>METALS</b>					Analyst	: JLF		
Arsenic	ND	0.020		mg/L	1	5/9/2018 4:31:57 PM	A51158		
Barium	0.065	0.020		mg/L	1	5/4/2018 2:23:35 PM	A51071		
Cadmium	ND	0.0020		mg/L	1	5/9/2018 4:31:57 PM	A51158		
Calcium	110	5.0		mg/L	5	5/9/2018 4:40:08 PM	A51158		
Chromium	ND	0.0060		mg/L	1	5/9/2018 4:31:57 PM	A51158		
Copper	ND	0.0060		mg/L	1	5/4/2018 2:23:35 PM	A51071		
Iron	ND	0.020		mg/L	1	5/4/2018 2:23:35 PM	A51071		
Lead	ND	0.0050		mg/L	1	5/9/2018 4:31:57 PM	A51158		
Magnesium	22	1.0		mg/L	1	5/4/2018 2:23:35 PM	A51071		
Manganese	ND	0.0020		mg/L	1	5/4/2018 2:23:35 PM	A51071		
Potassium	1.4	1.0		mg/L	1	5/4/2018 2:23:35 PM	A51071		
Selenium	ND	0.050		mg/L	1	5/9/2018 4:31:57 PM	A51158		
Silver	ND	0.0050		mg/L	1	5/4/2018 2:23:35 PM	A51071		
Sodium	61	1.0		mg/L	1	5/4/2018 2:23:35 PM	A51071		
Uranium	ND	0.10		mg/L	1	5/4/2018 2:23:35 PM	A51071		
Zinc	ND	0.020		mg/L	1	5/9/2018 4:31:57 PM	A51158		
EPA 6010B: TOTAL RECOVERABLE	METALS					Analyst	: JLF		
Arsenic	ND	0.020		mg/L	1	4/30/2018 4:22:35 PM	37785		
Barium	0.11	0.020		mg/L	1	4/29/2018 10:04:09 AM	37785		
Cadmium	ND	0.0020		mg/L	1	4/30/2018 4:22:35 PM	37785		
Chromium	ND	0.0060		mg/L	1	4/29/2018 10:04:09 AM	37785		

ND	0.020	mg/L	1	4/30/2016 4.22.35 FIV
0.11	0.020	mg/L	1	4/29/2018 10:04:09 AM
ND	0.0020	mg/L	1	4/30/2018 4:22:35 PM
ND	0.0060	mg/L	1	4/29/2018 10:04:09 AN
0.0054	0.0050	mg/L	1	4/30/2018 4:22:35 PM
ND	0.050	mg/L	1	4/30/2018 4:22:35 PM
0.0056	0.0050	mg/L	1	4/30/2018 4:22:35 PM

ND

#### **EPA METHOD 8260: VOLATILES SHORT LIST**

Benzene

Lead

Silver

Selenium

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

1.0

µg/L

**Oualifiers:** \* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
  - Н Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quanitative Limit
  - S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank

1

- Е Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 27 J

37785

37785

37785

Analyst: AG

4/25/2018 4:07:06 PM A50821

- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

4/25/2018 4:07:06 PM

4/25/2018 4:07:06 PM

4/25/2018 4:07:06 PM

1

1

1

A50821

A50821

A50821

CLIENT: Andeavor			Client Sample ID: Outfall #2						
Project:	NBB Observation/Collect	Collection Date: 4/20/2018 10:40:00 AM							
Lab ID:	1804B65-004	Matrix:	AQUEOUS	21/2018 9:40:00 AM					
Analyses		Result	PQL Qual	Units	DF	Date Analyzed	Batch		
	THOD 8260: VOLATILES S	HORT LIST				Analys	t: AG		
Toluene		ND	1.0	µg/L	1	4/25/2018 4:07:06 PM	A50821		
Ethylber	izene	ND	1.0	µg/L	1	4/25/2018 4:07:06 PM	A50821		
Methyl tert-butyl ether (MTBE) ND		1.0	µg/L	1	4/25/2018 4:07:06 PM	A50821			

1.5

70-130

70-130

µg/L

%Rec

%Rec

ND

113

100

### Hall Environmental Analysis Laboratory, Inc.

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

Xylenes, Total

Surr: Toluene-d8

Surr: 4-Bromofluorobenzene

- \* 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
- PQL Practical Quanitative Limit
- 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 Page 5 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor

**Project:** 

Lab ID:

Client Sample ID: Outfall #3 Collection Date: 4/20/2018 9:45:00 AM

NBB Observation/Collection Wells, OutfC1804B65-005Matrix: AQUEOUS

**Received Date:** 4/21/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
CARBON DIOXIDE						Analyst:	JRR
Total Carbon Dioxide	300	1.0	н	mg CO2/L	1	4/26/2018 4:11:09 PM	R50879
SM2320B: ALKALINITY						Analvst:	JRR
Bicarbonate (As CaCO3)	319.9	20.00		mg/L CaCO3	1	4/26/2018 4·11·09 PM	R50879
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/26/2018 4:11:09 PM	R50879
Total Alkalinity (as CaCO3)	319.9	20.00		mg/L CaCO3	1	4/26/2018 4:11:09 PM	R50879
EPA METHOD 7470: MERCURY				0		Analyst:	rde
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:21:31 AM	37815
EPA METHOD 7470: MERCURY				-		Analyst:	rde
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:23:42 AM	37815
EPA METHOD 6010B: DISSOLVED N	IETALS			0		Analvst:	JLF
Arsenic	ND	0.020		ma/l	1	5/9/2018 5:47:00 PM	B51158
Barium	0.090	0.020		mg/l	1	5/4/2018 2:25:35 PM	A51071
Cadmium	ND	0.0020		ma/L	1	5/9/2018 4:42:24 PM	A51158
Calcium	130	5.0		ma/L	5	5/9/2018 4:44:40 PM	A51158
Chromium	ND	0.0060		mg/L	1	5/9/2018 4:42:24 PM	A51158
Copper	ND	0.0060		mg/L	1	5/4/2018 2:25:35 PM	A51071
Iron	ND	0.020		mg/L	1	5/4/2018 2:25:35 PM	A51071
Lead	ND	0.0050		mg/L	1	5/9/2018 4:42:24 PM	A51158
Magnesium	25	1.0		mg/L	1	5/4/2018 2:25:35 PM	A51071
Manganese	ND	0.0020		mg/L	1	5/4/2018 2:25:35 PM	A51071
Potassium	2.2	1.0		mg/L	1	5/4/2018 2:25:35 PM	A51071
Selenium	ND	0.050		mg/L	1	5/9/2018 4:42:24 PM	A51158
Silver	ND	0.0050		mg/L	1	5/4/2018 2:25:35 PM	A51071
Sodium	80	1.0		mg/L	1	5/4/2018 2:25:35 PM	A51071
Uranium	ND	0.10		mg/L	1	5/4/2018 2:25:35 PM	A51071
Zinc	ND	0.020		mg/L	1	5/9/2018 4:42:24 PM	A51158
EPA 6010B: TOTAL RECOVERABLE	METALS					Analyst:	JLF
Arsenic	ND	0.020		mg/L	1	4/30/2018 4:24:22 PM	37785
Barium	0.10	0.020		mg/L	1	4/29/2018 10:05:50 AM	37785
Cadmium	ND	0.0020		mg/L	1	4/30/2018 4:24:22 PM	37785
Chromium	ND	0.0060		mg/L	1	4/29/2018 10:05:50 AM	37785
Lead	0.0052	0.0050		mg/L	1	4/30/2018 4:24:22 PM	37785
Selenium	ND	0.050		mg/L	1	4/30/2018 4:24:22 PM	37785
Silver	0.0059	0.0050		mg/L	1	4/30/2018 4:24:22 PM	37785
EPA METHOD 8260: VOLATILES SH	ORT LIST					Analyst:	AG
Benzene	ND	1.0		µg/L	1	4/25/2018 4:30:14 PM	A50821

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

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
- PQL Practical Quanitative Limit
- 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 Page 6 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

<b>CLIENT:</b>	Andeavor		Client Sample ID: Outfall #3							
Project:	NBB Observation/Collect	ion Wells, Outf		<b>Collection</b>	ion Date: 4/20/2018 9:45:00 AM					
Lab ID:	1804B65-005	Matrix:	AQUEOUS	<b>Received</b>	<b>Date:</b> 4/2	21/2018 9:40:00 AM				
Analyses		Result	PQL Qua	al Units	DF	Date Analyzed	Batch			
EPA MET	HOD 8260: VOLATILES S	HORT LIST				Analysi	: AG			
Toluene		ND	1.0	µg/L	1	4/25/2018 4:30:14 PM	A50821			
Ethylben	zene	ND	1.0	µg/L	1	4/25/2018 4:30:14 PM	A50821			
Methyl te	ert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/25/2018 4:30:14 PM	A50821			
Xylenes,	Total	ND	1.5	µg/L	1	4/25/2018 4:30:14 PM	A50821			
Surr: 4	4-Bromofluorobenzene	111	70-130	%Rec	1	4/25/2018 4:30:14 PM	A50821			
Surr: T	Toluene-d8	90.6	70-130	%Rec	1	4/25/2018 4:30:14 PM	A50821			

### Hall Environmental Analysis Laboratory, Inc.

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

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
- PQL Practical Quanitative Limit
- 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 Page 7 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1804B65

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/15/2018

Client Sample ID: Upstream Collection Date: 4/20/2018 12:20:00 PM

Project:NBB Observation/Collection Wells, OutfLab ID:1804B65-006Matrix: AQUEOUS

**CLIENT:** Andeavor

**Received Date:** 4/21/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E					Analyst	: ТОМ
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	4/26/2018 4:05:48 PM	37811
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/26/2018 4:05:48 PM	37811
Surr: DNOP	108	79.2-146		%Rec	1	4/26/2018 4:05:48 PM	37811
CARBON DIOXIDE						Analyst	: JRR
Total Carbon Dioxide	76	1.0	н	mg CO2/L	1	4/26/2018 4:25:42 PM	R50879
EPA METHOD 300.0: ANIONS						Analyst	: MRA
Fluoride	0.15	0.10		mg/L	1	4/29/2018 5:11:29 PM	R50914
Chloride	2.8	0.50		mg/L	1	4/29/2018 5:11:29 PM	R50914
Bromide	ND	0.10		mg/L	1	4/29/2018 5:11:29 PM	R50914
Phosphorus, Orthophosphate (As P)	ND	0.50	н	mg/L	1	4/29/2018 5:11:29 PM	R50914
Sulfate	50	10		mg/L	20	4/29/2018 5:24:21 PM	R50914
Nitrate+Nitrite as N	ND	1.0		mg/L	5	4/30/2018 4:08:12 PM	R50944
SM2320B: ALKALINITY						Analyst	: JRR
Bicarbonate (As CaCO3)	84.20	20.00		mg/L CaCO3	1	4/26/2018 4:25:42 PM	R50879
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/26/2018 4:25:42 PM	R50879
Total Alkalinity (as CaCO3)	84.20	20.00		mg/L CaCO3	1	4/26/2018 4:25:42 PM	R50879
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:25:55 AM	37815
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:28:07 AM	37815
EPA METHOD 6010B: DISSOLVED M	ETALS					Analyst	: JLF
Arsenic	ND	0.020		mg/L	1	5/9/2018 5:48:49 PM	B51158
Barium	0.058	0.020		mg/L	1	5/4/2018 2:27:35 PM	A51071
Cadmium	ND	0.0020		mg/L	1	5/9/2018 4:46:47 PM	A51158
Calcium	32	1.0		mg/L	1	5/4/2018 2:27:35 PM	A51071
Chromium	ND	0.0060		mg/L	1	5/9/2018 4:46:47 PM	A51158
Copper	ND	0.0060		mg/L	1	5/4/2018 2:27:35 PM	A51071
Iron	ND	0.020		mg/L	1	5/4/2018 2:27:35 PM	A51071
Lead	ND	0.0050		mg/L	1	5/9/2018 4:46:47 PM	A51158
Magnesium	5.7	1.0		mg/L	1	5/4/2018 2:27:35 PM	A51071
Manganese	0.0074	0.0020		mg/L	1	5/4/2018 2:27:35 PM	A51071
Potassium	1.7	1.0		mg/L	1	5/4/2018 2:27:35 PM	A51071
Selenium	ND	0.050		mg/L	1	5/9/2018 4:46:47 PM	A51158
Silver	ND	0.0050		mg/L	1	5/4/2018 2:27:35 PM	A51071
Sodium	20	1.0		mg/L	1	5/4/2018 2:27:35 PM	A51071
Uranium	ND	0.10		ma/L	1	5/4/2018 2:27:35 PM	A51071

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

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
- PQL Practical Quanitative Limit
- 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 Page 8 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Client Sample ID: Upstream **Project:** NBB Observation/Collection Wells, Outf Collection Date: 4/20/2018 12:20:00 PM Lab ID: 1804B65-006 Matrix: AQUEOUS Received Date: 4/21/2018 9:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: DISSOLVED	METALS				Analyst:	JLF
Zinc	ND	0.020	mg/L	1	5/9/2018 4:46:47 PM	A51158
EPA 6010B: TOTAL RECOVERABLE	E METALS				Analyst:	JLF
Arsenic	ND	0.020	mg/L	1	4/30/2018 4:26:17 PM	37785
Barium	0.079	0.020	mg/L	1	4/29/2018 10:07:38 AM	37785
Cadmium	ND	0.0020	mg/L	1	4/30/2018 4:26:17 PM	37785
Chromium	ND	0.0060	mg/L	1	4/29/2018 10:07:38 AM	37785
Lead	ND	0.0050	mg/L	1	4/30/2018 4:26:17 PM	37785
Selenium	ND	0.050	mg/L	1	4/30/2018 4:26:17 PM	37785
Silver	ND	0.0050	mg/L	1	4/30/2018 4:26:17 PM	37785
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst:	AG
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/25/2018 4:53:18 PM	W50821
Surr: BFB	106	70-130	%Rec	1	4/25/2018 4:53:18 PM	W50821
EPA METHOD 8260: VOLATILES SH	IORT LIST				Analyst:	AG
Benzene	ND	1.0	µg/L	1	4/25/2018 4:53:18 PM	A50821
Toluene	ND	1.0	µg/L	1	4/25/2018 4:53:18 PM	A50821
Ethylbenzene	ND	1.0	µg/L	1	4/25/2018 4:53:18 PM	A50821
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/25/2018 4:53:18 PM	A50821
Xylenes, Total	ND	1.5	µg/L	1	4/25/2018 4:53:18 PM	A50821
Surr: 4-Bromofluorobenzene	115	70-130	%Rec	1	4/25/2018 4:53:18 PM	A50821
Surr: Toluene-d8	100	70-130	%Rec	1	4/25/2018 4:53:18 PM	A50821

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

**Oualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 9 of 27 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: North of 46 Collection Date: 4/20/2018 12:50:00 PM

Project:NBB Observation/Collection Wells, OutfLab ID:1804B65-007Matrix: AQUEOUS

**CLIENT:** Andeavor

**Received Date:** 4/21/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E					Analyst	ТОМ
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	4/26/2018 4:27:45 PM	37811
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/26/2018 4:27:45 PM	37811
Surr: DNOP	109	79.2-146		%Rec	1	4/26/2018 4:27:45 PM	37811
CARBON DIOXIDE						Analyst	: JRR
Total Carbon Dioxide	78	1.0	н	mg CO2/L	1	4/26/2018 4:34:14 PM	R50879
EPA METHOD 300.0: ANIONS						Analyst	MRA
Fluoride	0.15	0.10		mg/L	1	4/29/2018 5:37:13 PM	R50914
Chloride	3.0	0.50		mg/L	1	4/29/2018 5:37:13 PM	R50914
Bromide	ND	0.10		mg/L	1	4/29/2018 5:37:13 PM	R50914
Phosphorus, Orthophosphate (As P)	ND	0.50	н	mg/L	1	4/29/2018 5:37:13 PM	R50914
Sulfate	59	10		mg/L	20	4/29/2018 5:50:05 PM	R50914
Nitrate+Nitrite as N	ND	1.0		mg/L	5	4/30/2018 4:59:38 PM	R50944
SM2320B: ALKALINITY						Analyst	: JRR
Bicarbonate (As CaCO3)	87.48	20.00		mg/L CaCO3	1	4/26/2018 4:34:14 PM	R50879
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/26/2018 4:34:14 PM	R50879
Total Alkalinity (as CaCO3)	87.48	20.00		mg/L CaCO3	1	4/26/2018 4:34:14 PM	R50879
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:30:20 AM	37815
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:32:33 AM	37815
EPA METHOD 6010B: DISSOLVED M	ETALS					Analyst	JLF
Arsenic	ND	0.020		mg/L	1	5/9/2018 5:50:37 PM	B51158
Barium	0.057	0.020		mg/L	1	5/4/2018 2:29:46 PM	A51071
Cadmium	ND	0.0020		mg/L	1	5/9/2018 4:48:56 PM	A51158
Calcium	35	1.0		mg/L	1	5/4/2018 2:29:46 PM	A51071
Chromium	ND	0.0060		mg/L	1	5/9/2018 4:48:56 PM	A51158
Copper	ND	0.0060		mg/L	1	5/4/2018 2:29:46 PM	A51071
Iron	0.033	0.020		mg/L	1	5/4/2018 2:29:46 PM	A51071
Lead	ND	0.0050		mg/L	1	5/9/2018 4:48:56 PM	A51158
Magnesium	5.9	1.0		mg/L	1	5/4/2018 2:29:46 PM	A51071
Manganese	0.044	0.0020		mg/L	1	5/4/2018 2:29:46 PM	A51071
Potassium	1.7	1.0		mg/L	1	5/4/2018 2:29:46 PM	A51071
Selenium	ND	0.050		mg/L	1	5/9/2018 4:48:56 PM	A51158
Silver	ND	0.0050		mg/L	1	5/4/2018 2:29:46 PM	A51071
Sodium	22	1.0		mg/L	1	5/4/2018 2:29:46 PM	A51071
Uranium	ND	0.10		mg/L	1	5/4/2018 2:29:46 PM	A51071

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

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
- PQL Practical Quanitative Limit
- 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 Page 10 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
**Analytical Report** Lab Order 1804B65 Date Reported: 5/15/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Client Sample ID: North of 46 NBB Observation/Collection Wells, Outf Collection Date: 4/20/2018 12:50:00 PM 1804B65-007 Matrix: AQUEOUS Received Date: 4/21/2018 9:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: DISSOLVED	METALS				Analyst	: JLF
Zinc	ND	0.020	mg/L	1	5/9/2018 4:48:56 PM	A51158
EPA 6010B: TOTAL RECOVERABL	E METALS				Analyst	JLF
Arsenic	ND	0.020	mg/L	1	4/30/2018 4:28:15 PM	37785
Barium	0.074	0.020	mg/L	1	4/29/2018 10:17:53 AM	37785
Cadmium	ND	0.0020	mg/L	1	4/30/2018 4:28:15 PM	37785
Chromium	ND	0.0060	mg/L	1	4/29/2018 10:17:53 AM	37785
Lead	ND	0.0050	mg/L	1	4/30/2018 4:28:15 PM	37785
Selenium	ND	0.050	mg/L	1	4/30/2018 4:28:15 PM	37785
Silver	ND	0.0050	mg/L	1	4/30/2018 4:28:15 PM	37785
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	AG
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/25/2018 6:02:43 PM	W50821
Surr: BFB	106	70-130	%Rec	1	4/25/2018 6:02:43 PM	W50821
EPA METHOD 8260: VOLATILES SI	HORT LIST				Analyst	AG
Benzene	ND	1.0	µg/L	1	4/25/2018 6:02:43 PM	A50821
Toluene	ND	1.0	μg/L	1	4/25/2018 6:02:43 PM	A50821
Ethylbenzene	ND	1.0	µg/L	1	4/25/2018 6:02:43 PM	A50821
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/25/2018 6:02:43 PM	A50821
Xylenes, Total	ND	1.5	µg/L	1	4/25/2018 6:02:43 PM	A50821
Surr: 4-Bromofluorobenzene	116	70-130	%Rec	1	4/25/2018 6:02:43 PM	A50821
Surr: Toluene-d8	99.4	70-130	%Rec	1	4/25/2018 6:02:43 PM	A50821

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

**Oualifiers:** 

**Project:** 

Lab ID:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 11 of 27 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Analytical Report
Lab Order 1804B65

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/15/2018

Client Sample ID: Downstream Collection Date: 4/20/2018 1:20:00 PM

Project:NBB Observation/Collection Wells, OutfLab ID:1804B65-008Matrix: AQUEOUS

**CLIENT:** Andeavor

Received Date: 4/21/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E					Analyst	: TOM
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	4/26/2018 5:02:47 PM	37811
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/26/2018 5:02:47 PM	37811
Surr: DNOP	110	79.2-146		%Rec	1	4/26/2018 5:02:47 PM	37811
CARBON DIOXIDE						Analyst	: JRR
Total Carbon Dioxide	77	1.0	н	mg CO2/L	1	4/26/2018 4:42:13 PM	R50879
EPA METHOD 300.0: ANIONS						Analyst	MRA
Fluoride	0.15	0.10		mg/L	1	4/29/2018 6:02:57 PM	R50914
Chloride	2.9	0.50		mg/L	1	4/29/2018 6:02:57 PM	R50914
Bromide	ND	0.10		mg/L	1	4/29/2018 6:02:57 PM	R50914
Phosphorus, Orthophosphate (As P)	ND	0.50	н	mg/L	1	4/29/2018 6:02:57 PM	R50914
Sulfate	58	10		mg/L	20	4/29/2018 6:15:48 PM	R50914
Nitrate+Nitrite as N	ND	1.0		mg/L	5	4/30/2018 5:12:30 PM	R50944
SM2320B: ALKALINITY						Analyst	: JRR
Bicarbonate (As CaCO3)	86.16	20.00		mg/L CaCO3	1	4/26/2018 4:42:13 PM	R50879
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/26/2018 4:42:13 PM	R50879
Total Alkalinity (as CaCO3)	86.16	20.00		mg/L CaCO3	1	4/26/2018 4:42:13 PM	R50879
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:34:47 AM	37815
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:37:02 AM	37815
EPA METHOD 6010B: DISSOLVED M	ETALS					Analyst	: JLF
Arsenic	ND	0.020		mg/L	1	5/9/2018 5:57:41 PM	B51158
Barium	0.058	0.020		mg/L	1	5/4/2018 2:31:56 PM	A51071
Cadmium	ND	0.0020		mg/L	1	5/9/2018 4:51:10 PM	A51158
Calcium	35	1.0		mg/L	1	5/4/2018 2:31:56 PM	A51071
Chromium	ND	0.0060		mg/L	1	5/9/2018 4:51:10 PM	A51158
Copper	ND	0.0060		mg/L	1	5/4/2018 2:31:56 PM	A51071
Iron	ND	0.020		mg/L	1	5/4/2018 2:31:56 PM	A51071
Lead	ND	0.0050		mg/L	1	5/9/2018 4:51:10 PM	A51158
Magnesium	5.9	1.0		mg/L	1	5/4/2018 2:31:56 PM	A51071
Manganese	0.016	0.0020		mg/L	1	5/4/2018 2:31:56 PM	A51071
Potassium	1.7	1.0		mg/L	1	5/4/2018 2:31:56 PM	A51071
Selenium	ND	0.050		mg/L	1	5/9/2018 4:51:10 PM	A51158
Silver	ND	0.0050		mg/L	1	5/4/2018 2:31:56 PM	A51071
Sodium	22	1.0		mg/L	1	5/4/2018 2:31:56 PM	A51071
Uranium	ND	0.10		mg/L	1	5/4/2018 2:31:56 PM	A51071

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

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
- PQL Practical Quanitative Limit
- 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 Page 12 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1804B65 Date Reported: 5/15/2018

## Hall Environmental Analysis Laboratory, Inc.

 CLIENT: Andeavor
 Client Sample ID: Downstream

 Project:
 NBB Observation/Collection Wells, Outf
 Collection Date: 4/20/2018 1:20:00 PM

 Lab ID:
 1804B65-008
 Matrix: AQUEOUS
 Received Date: 4/21/2018 9:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: DISSOLVED	METALS				Analyst:	JLF
Zinc	ND	0.020	mg/L	1	5/9/2018 4:51:10 PM	A51158
EPA 6010B: TOTAL RECOVERABL	E METALS				Analyst:	JLF
Arsenic	ND	0.0200	mg/L	1	4/30/2018 4:36:44 PM	37785
Barium	0.078	0.020	mg/L	1	4/29/2018 10:19:48 AM	37785
Cadmium	ND	0.00200	mg/L	1	4/30/2018 4:36:44 PM	37785
Chromium	ND	0.0060	mg/L	1	4/29/2018 10:19:48 AM	37785
Lead	ND	0.00500	mg/L	1	4/30/2018 4:36:44 PM	37785
Selenium	ND	0.0500	mg/L	1	4/30/2018 4:36:44 PM	37785
Silver	ND	0.00500	mg/L	1	4/30/2018 4:36:44 PM	37785
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst:	AG
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/25/2018 6:25:49 PM	W50821
Surr: BFB	106	70-130	%Rec	1	4/25/2018 6:25:49 PM	W50821
EPA METHOD 8260: VOLATILES SI	HORT LIST				Analyst:	AG
Benzene	ND	1.0	µg/L	1	4/25/2018 6:25:49 PM	A50821
Toluene	ND	1.0	µg/L	1	4/25/2018 6:25:49 PM	A50821
Ethylbenzene	ND	1.0	µg/L	1	4/25/2018 6:25:49 PM	A50821
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/25/2018 6:25:49 PM	A50821
Xylenes, Total	ND	1.5	µg/L	1	4/25/2018 6:25:49 PM	A50821
Surr: 4-Bromofluorobenzene	115	70-130	%Rec	1	4/25/2018 6:25:49 PM	A50821
Surr: Toluene-d8	98.6	70-130	%Rec	1	4/25/2018 6:25:49 PM	A50821

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

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- D Sample Diluted Due to MatrixH Holding times for preparation o
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 13 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report
Lab Order 1804B65

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/15/2018

Client Sample ID: North of 45OutfCollection Date: 4/20/2018 1:55:00 PM

Project:NBB Observation/Collection Wells, OutfLab ID:1804B65-009Matrix: AQUEOUS

**CLIENT:** Andeavor

Received Date: 4/21/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E					Analyst	ТОМ
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	4/26/2018 5:24:47 PM	37811
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/26/2018 5:24:47 PM	37811
Surr: DNOP	110	79.2-146		%Rec	1	4/26/2018 5:24:47 PM	37811
CARBON DIOXIDE						Analyst	: JRR
Total Carbon Dioxide	75	1.0	н	mg CO2/L	1	4/26/2018 4:50:08 PM	R50879
EPA METHOD 300.0: ANIONS						Analyst	MRA
Fluoride	0.15	0.10		mg/L	1	4/29/2018 6:28:40 PM	R50914
Chloride	2.8	0.50		mg/L	1	4/29/2018 6:28:40 PM	R50914
Bromide	ND	0.10		mg/L	1	4/29/2018 6:28:40 PM	R50914
Phosphorus, Orthophosphate (As P)	ND	0.50	н	mg/L	1	4/29/2018 6:28:40 PM	R50914
Sulfate	49	10		mg/L	20	4/29/2018 6:41:32 PM	R50914
Nitrate+Nitrite as N	ND	1.0		mg/L	5	4/30/2018 5:25:21 PM	R50944
SM2320B: ALKALINITY						Analyst	: JRR
Bicarbonate (As CaCO3)	84.32	20.00		mg/L CaCO3	1	4/26/2018 4:50:08 PM	R50879
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/26/2018 4:50:08 PM	R50879
Total Alkalinity (as CaCO3)	84.32	20.00		mg/L CaCO3	1	4/26/2018 4:50:08 PM	R50879
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:43:54 AM	37815
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	4/27/2018 10:46:10 AM	37815
EPA METHOD 6010B: DISSOLVED M	ETALS					Analyst	JLF
Arsenic	ND	0.020		mg/L	1	5/9/2018 5:59:31 PM	B51158
Barium	0.055	0.020		mg/L	1	5/4/2018 2:34:07 PM	A51071
Cadmium	ND	0.0020		mg/L	1	5/9/2018 4:53:18 PM	A51158
Calcium	32	1.0		mg/L	1	5/4/2018 2:34:07 PM	A51071
Chromium	ND	0.0060		mg/L	1	5/9/2018 4:53:18 PM	A51158
Copper	ND	0.0060		mg/L	1	5/4/2018 2:34:07 PM	A51071
Iron	ND	0.020		mg/L	1	5/4/2018 2:34:07 PM	A51071
Lead	ND	0.0050		mg/L	1	5/9/2018 4:53:18 PM	A51158
Magnesium	5.7	1.0		mg/L	1	5/4/2018 2:34:07 PM	A51071
Manganese	0.0065	0.0020		mg/L	1	5/4/2018 2:34:07 PM	A51071
Potassium	1.8	1.0		mg/L	1	5/4/2018 2:34:07 PM	A51071
Selenium	ND	0.050		mg/L	1	5/9/2018 4:53:18 PM	A51158
Silver	ND	0.0050		mg/L	1	5/4/2018 2:34:07 PM	A51071
Sodium	20	1.0		mg/L	1	5/4/2018 2:34:07 PM	A51071
Uranium	ND	0.10		mg/L	1	5/4/2018 2:34:07 PM	A51071

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

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
- PQL Practical Quanitative Limit
- 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 Page 14 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1804B65 Date Reported: 5/15/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: AndeavorClient Sample ID: North of 45Project:NBB Observation/Collection Wells, OutfCollection Date: 4/20/2018 1:55:00 PMLab ID:1804B65-009Matrix: AQUEOUSReceived Date: 4/21/2018 9:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: DISSOLVED	METALS				Analyst:	JLF
Zinc	ND	0.020	mg/L	1	5/9/2018 4:53:18 PM	A51158
EPA 6010B: TOTAL RECOVERABL	E METALS				Analyst:	JLF
Arsenic	ND	0.0200	mg/L	1	4/30/2018 4:38:43 PM	37785
Barium	0.13	0.020	mg/L	1	4/29/2018 10:21:39 AM	37785
Cadmium	ND	0.00200	mg/L	1	4/30/2018 4:38:43 PM	37785
Chromium	ND	0.0060	mg/L	1	4/29/2018 10:21:39 AM	37785
Lead	ND	0.00500	mg/L	1	4/30/2018 4:38:43 PM	37785
Selenium	ND	0.0500	mg/L	1	4/30/2018 4:38:43 PM	37785
Silver	ND	0.00500	mg/L	1	4/30/2018 4:38:43 PM	37785
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst:	AG
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/25/2018 6:48:57 PM	W50821
Surr: BFB	111	70-130	%Rec	1	4/25/2018 6:48:57 PM	W50821
EPA METHOD 8260: VOLATILES SI	HORT LIST				Analyst:	AG
Benzene	ND	1.0	µg/L	1	4/25/2018 6:48:57 PM	A50821
Toluene	ND	1.0	µg/L	1	4/25/2018 6:48:57 PM	A50821
Ethylbenzene	ND	1.0	µg/L	1	4/25/2018 6:48:57 PM	A50821
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	4/25/2018 6:48:57 PM	A50821
Xylenes, Total	ND	1.5	µg/L	1	4/25/2018 6:48:57 PM	A50821
Surr: 4-Bromofluorobenzene	121	70-130	%Rec	1	4/25/2018 6:48:57 PM	A50821
Surr: Toluene-d8	94.0	70-130	%Rec	1	4/25/2018 6:48:57 PM	A50821

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

- \* 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
- PQL Practical Quanitative Limit
- 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 Page 15 of 27
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Client: Project:	An NH	deavor 3B Obse	ervation/O	Collec	tion Wells, C	Outfalls, Sa						
Sample ID	MB		SampT	ype: r	nblk	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	PBW		Batcl	h ID: F	R50914	F	RunNo: 5	0914				
Prep Date:			Analysis D	Date:	4/29/2018	S	SeqNo: 1	652910	Units: mg/L			
Analvte			Result	PQL	. SPK value	SPK Ref Val	%REC	LowLimit	HiahLimit	%RPD	RPDLimit	Qual
Fluoride			ND	0.1	0				5			
Chloride			ND	0.5	0							
Bromide			ND	0.1	0							
Phosphorus, O	rthophosphate	(As P	ND	0.5	0							
Sulfate			ND	0.5	0							
Sample ID	LCS		SampT	ype: I	cs	Tes	tCode: El	PA Method	300.0: Anions	;		
Client ID:	LCSW		Batcl	h ID: F	R50914	F	RunNo: 5	0914				
Prep Date:			Analysis D	Date:	4/29/2018	5	SeqNo: 1	652911	Units: mg/L			
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride			0.49	0.1	0 0.5000	0	98.9	90	110			
Chloride			4.6	0.5	0 5.000	0	92.7	90	110			
Bromide			2.4	0.1	0 2.500	0	95.7	90	110			
Phosphorus, O	rthophosphate	(As P	4.8	0.5	0 5.000	0	95.2	90	110			
Sulfate			9.2	0.5	0 10.00	0	91.8	90	110			
Sample ID	МВ		SampT	ype: <b>r</b>	nblk	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	PBW		Batcl	h ID: F	R50944	F	RunNo: 5	0944				
Prep Date:			Analysis E	Date:	4/30/2018	Ś	SeqNo: 1	653920	Units: mg/L			
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite	as N		ND	0.2	0							
Sample ID	LCS		SampT	ype: I	cs	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	LCSW		Batcl	h ID: F	R50944	F	RunNo: 5	0944				
Prep Date:			Analysis E	Date:	4/30/2018	S	SeqNo: 1	653921	Units: mg/L			
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite	as N		3.3	0.2	0 3.500	0	94.9	90	110			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 16 of 27

Client:	Andeavor	amustion/C	allaati	on Walls C	utfalla Sa						
	NBB OUS	ervation/C	onecuo	JII Wells, C	Jutians, Sa						
Sample ID	1804B65-001BMS	SampTy	ype: <b>M\$</b>	6	Tes	tCode: E	PA Method	8015D: Diese	I Range		
Client ID:	OW 22+00	Batch	ID: 37	811	F	RunNo: 5	0846				
Prep Date:	4/26/2018	Analysis Da	ate: 4/	26/2018	S	SeqNo: 1	650684	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	2.7	0.40	2.500	0	108	89.6	145			
Surr: DNOP		0.27		0.2500		108	79.2	146			
Sample ID	1804B65-001BMSI	SampTy	ype: <b>M</b> \$	SD	Tes	tCode: E	PA Method	8015D: Diese	I Range		
Client ID:	OW 22+00	Batch	ID: 37	811	F	RunNo: 5	0846				
Prep Date:	4/26/2018	Analysis Da	ate: 4/	26/2018	S	SeqNo: 1	650685	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	3.0	0.40	2.500	0	120	89.6	145	10.8	20	
Surr: DNOP		0.28		0.2500		112	79.2	146	0	0	
Sample ID	LCS-37811	SampT	ype: LC	S	Tes	tCode: E	PA Method	8015D: Diese	I Range		
Client ID:	LCSW	Batch	ID: 37	811	F	RunNo: 5	0846				
Prep Date:	4/26/2018	Analysis Da	ate: 4/	26/2018	S	SeqNo: 1	650691	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	2.6	0.40	2.500	0	105	76.5	158			
Surr: DNOP		0.27		0.2500		108	79.2	146			
Sample ID	MB-37811	SampTy	ype: ME	BLK	Tes	tCode: E	PA Method	8015D: Diese	I Range		
Client ID:	PBW	Batch	ID: 37	811	F	RunNo: 5	0846				
Prep Date:	4/26/2018	Analysis Da	ate: 4/	26/2018	5	SeqNo: 1	650692	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	ND	0.40								
Motor Oil Rang	ge Organics (MRO)	ND	2.5								
Surr: DNOP		0.53		0.5000		106	79.2	146			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 17 of 27

Client:   Andeavor     Project:   NBB Obs	r servation/(	Collecti	on Wells, C	Outfalls, Sa						
Sample ID 100ng lcs	Samp	Гуре: <b>LC</b>	CS4	Tes	tCode: E	PA Method	8260: Volatile	es Short L	ist	
Client ID: BatchQC	Batc	h ID: A5	<b>60821</b>	F	RunNo: 5	0821				
Prep Date:	Analysis [	Date: 4	/25/2018	S	SeqNo: 1	649367	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	80	120			
Toluene	21	1.0	20.00	0	103	80	120			
Ethylbenzene	21	1.0	20.00	0	105	80	120			
Methyl tert-butyl ether (MTBE)	18	1.0	20.00	0	87.9	80	120			
Xylenes, Total	61	1.5	60.00	0	102	80	120			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.7	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			
Sample ID <b>rb</b>	Samp	Гуре: <b>МІ</b>	BLK	Tes	tCode: E	PA Method	8260: Volatile	es Short L	ist	
Client ID: PBW	Batc	h ID: A5	60821	F	RunNo: 5	0821				
Prep Date:	Analysis E	Date: 4	/25/2018	S	SeqNo: 1	649369	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: 4-Bromofluorobenzene	12		10.00		119	70	130			
Surr: Toluene-d8	10		10.00		99.6	70	130			
Sample ID 1804b65-006ams	Samp	Гуре: М	S4	Tes	tCode: E	PA Method	8260: Volatile	es Short L	_ist	
Client ID: Upstream	Batc	h ID: A5	60821	F	RunNo: 5	0821				
Prep Date:	Analysis E	Date: 4	/25/2018	S	SeqNo: 1	649856	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.3	80	120			
loluene	20	1.0	20.00	0	98.8	80	120			
Ethylbenzene	20	1.0	20.00	0	98.8	80	120			
Methyl tert-butyl ether (MTBE)	18	1.0	20.00	0.3706	87.0	80	120			
Xylenes, I otal	58	1.5	60.00	0	96.8	80	120			
Surr: 4-Bromotluorobenzene	9.7		10.00		97.0	70	130			
Surr: Toluene-d8	9.9		10.00		98.7	70	130			
Sample ID 1804b65-006amsc	Samp	Type: MS	SD4	Tes	tCode: E	PA Method	8260: Volatile	es Short L	ist	
Client ID: Upstream	Batc	h ID: A5	0821	F	RunNo: 5	0821				
Prep Date:	Analysis [	Date: 4	/25/2018	Ś	SeqNo: 1	649857	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.6	80	120	0.781	20	
Q 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

PQL Practical Quanitative Limit

- 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

Page 18 of 27

## Client:

Andeavor

Project: NBB Observation/Collection Wells, Outfalls, Sa

Sample ID 1804b65-006ams	d SampType: MSD4 TestCode: EPA Method 8260: Volatiles Short List									
Client ID: Upstream	Batch	ID: <b>A5</b>	0821	F	RunNo: 5	0821				
Prep Date:	Analysis D	ate: 4/	25/2018	S	SeqNo: 1	649857	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	19	1.0	20.00	0	94.5	80	120	4.42	20	
Ethylbenzene	19	1.0	20.00	0	94.4	80	120	4.52	20	
Methyl tert-butyl ether (MTBE)	16	1.0	20.00	0.3706	80.1	80	120	8.04	20	
Xylenes, Total	55	1.5	60.00	0	91.7	80	120	5.45	20	
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130	0	0	
Surr: Toluene-d8	9.9		10.00	98.8 70 130 0				0		

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 19 of 27

Client:	Andeavo	r								
Project:	NBB Obs	servation/Collect	tion Wells, C	outfalls, Sa						
Sample ID	MB-37815	SampType: N	IBLK	Tes	tCode: EP	PA Method	7470: Mercur	у		
Client ID:	PBW	Batch ID: 3	7815	F	anNo: 50	)885				
Prep Date:	4/26/2018	Analysis Date:	4/27/2018	S	eqNo: 16	51661	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND 0.00020	0							
Sample ID	LCS-37815	SampType: L	.CS	Tes	tCode: EP	PA Method	7470: Mercur	у		
Client ID:	LCSW	Batch ID: 3	7815	F	lunNo: 50	0885				
Prep Date:	4/26/2018	Analysis Date:	4/27/2018	S	eqNo: 16	51662	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0052 0.00020	0.005000	0	105	80	120			
Sample ID	LCSD-37815	SampType: L	.CSD	Tes	tCode: EP	PA Method	7470: Mercur	у		
Client ID:	LCSS02	Batch ID: 3	7815	F	unNo: <b>50</b>	)885				
Prep Date:	4/26/2018	Analysis Date:	4/27/2018	S	eqNo: 16	51663	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0053 0.00020	0.005000	0	107	80	120	1.89	20	

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 20 of 27

Client: Project:		Andeavor NBB Observation	/Collecti	on Wells, C	outfalls, Sa						
Sample ID	MB-A	Samp	оТуре: <b>М</b>	BLK	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Bat	ch ID: A	51071	F	RunNo:	51071				
Prep Date:		Analysis	Date: 5	/4/2018	S	SeqNo: '	1658828	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		ND	0.020								
Calcium		ND	1.0								
Copper		ND	0.0060								
Iron		ND	0.020								
Magnesium		ND	1.0								
Manganese		ND	0.0020								
Potassium		ND	1.0								
Silver		ND	0.0050								
Sodium		ND	1.0								
Uranium		ND	0.10								
Sample ID	LCS-A	Samp	oType: L	cs	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Bat	ch ID: A	51071	F	RunNo:	51071				
Prep Date:		Analysis	Date: 5	/4/2018	S	SeqNo: '	1658830	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.50	0.020	0.5000	0	99.1	80	120			
Calcium		46	1.0	50.00	0	92.2	80	120			
Copper		0.47	0.0060	0.5000	0	94.2	80	120			
Iron		0.47	0.020	0.5000	0	93.8	80	120			
Magnesium		49	1.0	50.00	0	97.2	80	120			
Manganese		0.46	0.0020	0.5000	0	91.6	80	120			
Potassium		48	1.0	50.00	0	96.1	80	120			
Silver		0.11	0.0050	0.1000	0	107	80	120			
Sodium		49	1.0	50.00	0	98.6	80	120			
Uranium		0.47	0.10	0.5000	0	94.8	80	120			
Sample ID	LCSD-	A Samp	Type: L	cs	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Bat	ch ID: A	51071	F	RunNo: 🖁	51071				
Prep Date:		Analysis	Date: 5	/4/2018	S	SeqNo: '	1658831	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.49	0.020	0.5000	0	98.6	80	120			
Calcium		45	1.0	50.00	0	90.6	80	120			
Copper		0.47	0.0060	0.5000	0	93.3	80	120			
Iron		0.46	0.020	0.5000	0	92.2	80	120			
Magnesium		48	1.0	50.00	0	95.5	80	120			
Manganese		0.45	0.0020	0.5000	0	90.5	80	120			
Potassium		47	1.0	50.00	0	94.4	80	120			
Silver		0.11	0.0050	0.1000	0	108	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
- PQL Practical Quanitative Limit
- 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

Page 21 of 27

Client:		Andeavor		0.11.		Valla C							
Project:		NBB Observ	ation/	Colle	ction v	vens, c	Jutialis, Sa						
Sample ID	LCSD-	4	Samp <sup>-</sup>	Гуре:	LCS		Tes	stCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW		Batc	h ID:	A5107	1	I	RunNo: 5	51071				
Prep Date:		An	alysis [	Date:	5/4/20	18	:	SeqNo: 1	658831	Units: mg/L			
Analyte		R	lesult	PQ	L SP	'K value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium			48	1	.0	50.00	0	96.6	80	120			
Uranium			0.46	0.	10	0.5000	0	93.0	80	120			
Sample ID	MB-A		Samp <sup>-</sup>	Гуре:	MBLK		Tes	stCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW		Batc	h ID:	A5115	8	I	RunNo: 🚦	51158				
Prep Date:		An	alysis [	Date:	5/9/20	18	:	SeqNo: 1	662080	Units: mg/L			
Analyte		R	esult	PQ	L SP	K value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic			ND	0.0	20								
Cadmium			ND	0.00	20								
Calcium			ND	1	.0								
Chromium			ND	0.00	60								
Lead			ND	0.00	50								
Selenium			ND	0.0	50								
Zinc			ND	0.0	20								
Sample ID	LCS-A		Samp <sup>-</sup>	Гуре:	LCS		Tes	stCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW		Batc	h ID:	A5115	8	I	RunNo: 5	51158				
Prep Date:		An	alysis [	Date:	5/9/20	18	:	SeqNo: 1	662082	Units: mg/L			
Analyte		R	lesult	PQ	L SP	K value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic			0.50	0.0	20	0.5000	0	99.5	80	120			
Cadmium			0.53	0.00	20	0.5000	0	105	80	120			
Calcium			50	1	.0	50.00	0	99.4	80	120			
Chromium			0.49	0.00	60	0.5000	0	97.8	80	120			
Lead			0.50	0.00	50	0.5000	0	100	80	120			
Selenium			0.50	0.0	50	0.5000	0	100	80	120			
Zinc			0.49	0.0	20	0.5000	0	97.1	80	120			
Sample ID	MB-B		Samp <sup>-</sup>	Гуре:	MBLK		Tes	stCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW		Batc	h ID:	B5115	8	I	RunNo: 🚦	51158				
Prep Date:		An	alysis [	Date:	5/9/20	18	:	SeqNo: 1	662172	Units: mg/L			
Analyte		R	esult	PQ	L SP	K value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic			ND	0.0	20								

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 22 of 27
- 1 "5

Client:		Andeavor											
Project:		NBB Obse	ervation/C	Collecti	on Wells, O	outfalls, Sa							
Sample ID	LCS-B		SampT	ype: LC	s	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als		٦
Client ID:	LCSW		Batch	ID: <b>B</b> 5	51158	R	RunNo: 5	1158					
Prep Date:			Analysis D	ate: 5/	/9/2018	S	SeqNo: 1	662174	Units: mg/L				
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic			0.48	0.020	0.5000	0	95.5	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
- PQL Practical Quanitative Limit
- 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

Page 23 of 27

Client:	Andeavor										
Project:	NBB Obs	ervation/Col	lectior	n Wells, O	utfalls, Sa						
Sample ID	MB-37785	SampTyp	e: MBL	ĸ	Tes	tCode: E	PA 6010B: 1	Fotal Recover	able Meta	ls	
Client ID:	PBW	Batch ID	: 3778	35	R	RunNo: 5	0899				
Prep Date:	4/25/2018	Analysis Date	: 4/29	9/2018	S	SeqNo: 1	652037	Units: mg/L			
Analyte		Result F	QL S	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		ND C	.020								
Chromium		ND 0.0	060								
Sample ID	LCS-37785	SampTyp	E LCS	;	Tes	tCode: E	PA 6010B: 1	Fotal Recover	able Meta	lls	
Client ID:	LCSW	Batch ID	: 3778	35	R	RunNo: 5	0899				
Prep Date:	4/25/2018	Analysis Date	: 4/29	9/2018	S	SeqNo: 1	652038	Units: mg/L			
Analyte		Result F	QL S	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.53 0	.020	0.5000	0	107	80	120			
Chromium		0.53 0.0	060	0.5000	0	105	80	120			
Sample ID	MB-37785	SampTyp	e: MBL	ĸ	Tes	tCode: E	PA 6010B: 1	Total Recover	able Meta	Is	
Client ID:	PBW	Batch ID	: 3778	35	R	RunNo: 5	0899				
Prep Date:	4/25/2018	Analysis Date	: 4/29	9/2018	S	SeqNo: 1	652180	Units: mg/L			
Analyte		Result F	QL S	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver		ND 0.0	0050								
Sample ID	LCS-37785	SampTyp	e: LCS	;	Tes	tCode: E	PA 6010B: 1	Total Recover	able Meta	lls	
Client ID:	LCSW	Batch ID	: 3778	35	R	RunNo: 5	0899				
Prep Date:	4/25/2018	Analysis Date	: 4/29	9/2018	S	SeqNo: 1	652181	Units: mg/L			
Analyte		Result F	QL S	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver		0.10 0.0	0050	0.1000	0	102	80	120			
Sample ID	MB-37785	SampTyp	e: MBL	_K	Tes	tCode: E	PA 6010B: 1	Fotal Recover	able Meta	lls	
Client ID:	PBW	Batch ID	: 3778	35	R	RunNo: 5	0922				
Prep Date:	4/25/2018	Analysis Date	: 4/30	0/2018	S	SeqNo: 1	653138	Units: mg/L			
Analyte		Result F	QL S	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND 0.0	)200								
Cadmium		ND 0.00	)200								
Lead		ND 0.00	)500								
Selenium		ND 0.0	1500								
Silver		ND 0.00	000								

### **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
- PQL Practical Quanitative Limit
- 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

Page 24 of 27

## Client:AndeavorProject:NBB Observation/Collection Wells, Outfalls, Sa

Sample ID LCS-37785 Client ID: LCSW	Samp <sup>-</sup> Batc	Type: LC	S 785	Test R	Code: El	PA 6010B: ` 0922	Total Recover	able Meta	als	
Prep Date: 4/25/2018	Analysis I	Date: 4/	30/2018	5	eqNo: 1	653140	Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.543	0.0200	0.5000	0	109	80	120			
Cadmium	0.537	0.00200	0.5000	0	107	80	120			
Lead	0.508	0.00500	0.5000	0	102	80	120			
Selenium	0.507	0.0500	0.5000	0	101	80	120			
Silver	0.106	0.00500	0.1000	0	106	80	120			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 25 of 27

Client: Project:	Andeavor NBB Obs	r servation/(	Collecti	on Wells, C	Outfalls, Sa						
Sample ID	2.5ug gro lcs	SampT	Гуре: L	cs	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	е	
Client ID:	LCSW	Batcl	h ID: W	50821	F	RunNo: 5	0821				
Prep Date:		Analysis D	Date: 4	/25/2018	S	SeqNo: 1	649844	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	je Organics (GRO)	0.51	0.050	0.5000	0	101	70	130			
Surr: BFB		9.8		10.00		98.4	70	130			
Sample ID	rb	SampT	Гуре: М	BLK	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	е	
Client ID:	PBW	Batcl	h ID: W	50821	F	RunNo: 5	0821				
Prep Date:		Analysis E	Date: 4	/25/2018	S	SeqNo: 1	649845	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	ND	0.050								
Surr: BFB		11		10.00		109	70	130			
Sample ID	1804b65-001ams	SampT	Гуре: М	s	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	е	
Client ID:	OW 22+00	Batcl	hID: W	50821	F	RunNo: 5	0821				
Prep Date:		Analysis E	Date: 4	/25/2018	5	SeqNo: 1	649939	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	0.50	0.050	0.5000	0	100	70	130			
Surr: BFB		9.9		10.00		99.3	70	130			
Sample ID	1804b65-001amsc	I SampT	Гуре: М	SD	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	е	
Client ID:	OW 22+00	Batcl	h ID: W	50821	F	RunNo: 5	0821				
Prep Date:		Analysis D	Date: 4	/25/2018	S	SeqNo: 1	649940	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	0.46	0.050	0.5000	0	91.3	70	130	9.60	20	
Surr: BFB		9.7		10.00		96.8	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
- PQL Practical Quanitative Limit
- 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

### Page 26 of 27

Client: Project:	A	Andeavor NBB Obse	rvation/0	Collect	ion Wells, C	Outfalls, Sa						
Sample ID Client ID:	mb-1 alk PBW		Samp] Batc	Гуре: <b>N</b> h ID: <b>R</b>	IBLK 50879	Tes F	tCode: <b>S</b> l RunNo: <b>5</b>	M2320B: AI 0879	kalinity			
Prep Date:		/	Analysis E	Date:	4/26/2018	S	SeqNo: 1	651059	Units: <b>mg/L</b>	. CaCO3		
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3)		ND	20.00	)							
Sample ID	lcs-1 alk		Samp	Type: L	cs	Tes	tCode: SI	M2320B: AI	kalinity			
Client ID:	LCSW		Batc	hID:R	50879	F	RunNo: 5	0879				
Prep Date:		/	Analysis E	Date:	4/26/2018	S	SeqNo: 1	651060	Units: <b>mg/L</b>	CaCO3		
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3)		79.84	20.00	80.00	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
- PQL Practical Quanitative Limit
- 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

Page 27 of 27

HALL ENVIRONMENTAL ANALYSIS LABORATORY 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: ANDEAVOR BLOOMFIEL	Vork Order Number: 180	4B65		RcptNo: 1	
Received By: Isaiah Ortiz 4/2	1/2018 9:40:00 AM	I			
Completed By: Erin Melendrez 4/2	3/2018 4:32:13 PM	Ń	NG		
Reviewed By: MW 4/23/18 LB: ENM					
Chain of Custody					
1. Is Chain of Custody complete?	Yes	. 🗹 🛛	No 🗌 🛛 No	ot Present 🗌	
2. How was the sample delivered?	<u>Cor</u>	<u>irier</u>			
<u>Log In</u>					
3. Was an attempt made to cool the samples?	Yes	<b>⊻</b> 1	No 🗌	NA 🗌	
4. Were all samples received at a temperature of >0	)° C to 6.0°C Yes		No 🗆		
5. Sample(s) in proper container(s)?	Yes		No 🗆		
6. Sufficient sample volume for indicated test(s)?	Yes	✓ N	lo 🗌		
7. Are samples (except VOA and ONG) properly pres	served? Yes	<b>V</b> N	lo 🗌		
8. Was preservative added to bottles?	Yes		lo 🗹	NA 🗆	
9. VOA vials have zero headspace?	ves	A, N	lo 🗌 👘 No V	OA Vials 🔀	
10. Were any sample containers received broken?	Yes	-2 <sup>s/12</sup> I	No 🗹 #ofi	preserved	<u>.</u>
11.Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes		lo 🗌 for pl	es checked H: ©or >12	unless noted)
2. Are matrices correctly identified on Chain of Custo	ody? Yes	<b>V</b> N	lo 🗌	Adjusted?	0
[3] Is it clear what analyses were requested?	Yes				NL F
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes		lo 📙	Checked by: <u>F.N</u>	M
Special Handling (if applicable)					
15. Was client notified of all discrepancies with this or	rder? Yes	<b>I</b>	No 🗆	NA 🗹	
Person Notified:	Date:	*****			
By Whom:	Via: 🛄 eN	lail 🗌 Phone	🗌 Fax 🔲 In	Person	
Regarding:				and a submitted of a	
16 Additional semantes					
17. <u>Cooler Information</u> Cooler No Temp °C Condition Seal Int	act Seal No Seal C	ate Sione	ed By		
1 0.5 Good Yes	<u></u>		<u></u>		

щ С		TORY							()		<u>) ))</u>	Air Bubbles	-	 									.Se		
ں ۲			}	109								_				 -	[				 		Jalyte		
$\mathcal{N}$			Ę	M 87	410		-		<u> </u>	(A	0/-	im92) 0728	·									1	jet Al		
	ļ	<b>Š</b>	tal.cc	Z P	-345	uest	Λjι	io 3811	N 'X	(at)	9 (V	OV) 80928	×		X						 		Tarç		
	į	2 3	men	nerqu	505	Req	s	S PCB	808	3/\$	səbi	oitea¶ 1808											s and		
			viro.	Ibndi	Fax	lysis	(1	*OS'*Od	1' <sup>z</sup> C	°'N)	ON'		,	ļ									thods		
	-		aller	A .	ы С	Ana		(0)			slet										 		al Me		
			T.W	s NE	5-397			(SN		.97C						 					 		lytica		
		Ľ Z	3	awkin	5-345				() ()	.81	7 po									_			Ana		
				01 Hε	I. 50!		(۲.		INE	TXE	I ОЯ	D) 88108 H9T		×									: See		
				49(	Чe		(/	kjuo se	9)H	ЧЧТ	.+∃	атм+хэта											arks		
								(1208)	s'S	IMI	.+∃	BTEX+MTE											Ren		
			lection Wells	8	Event		lains		ne	No	0.5	HEAL No.	-009		-003								Hote Time Πομε Λου	Date Time	
	Time:	D Rush	e: NBB - Co	4-20	emi-Annual	3266	Ider: Allen H		Tracv Pav	NY es	perature: (	Preservative Type	HCI	Neat	HCC								Jet-	4 H	
· · ·	Turn-Around	X Standard	Project Name	Date:	Project #: Se	PO# 1262;	Project Mana	·* .	Sampler:	On Ice:	Sample Tem	Container Type and #	40ml VOA-5	250 ml amber-1	100-3								Received by:	Received by:	
	ustody Record	Bloomfield Terminal		R 4990	nfield, NM 87413	34-1483	S.Hains@Andeavor.com	X Level 4 (Full Validation)				Sample Request ID	CW 25+95	CW 25+95	TRIP BLANK			-						hed by: Lutts We le	
	-of-C	avor -	1	is: <b>50 C</b>	Blool	915-5	Allen.			EXCE		Matrix	+ H <sub>2</sub> O	H <sub>2</sub> O	H20								Relinquis	Relinquis	$\square$
	<u>Shain</u>	Ande		addres		#:	or Fax#:	Package 1dard	er	) (Type)		Time	0905	$\rightarrow$	1				_				Time: <b>Ø //OO</b>	Time: 1841	
		Client		Mailinç		Phone	<u>email c</u>	QA/QC		X Edi		Date	4/2d/19		1/20/1								V29/9	Date:  عارض/	-

		ג ב								(N	or I	(۸	Air Bubbles			 			 	$\left  \right $	
a		₹ Ö	)										-								Anal)
			с   	60						!	slei	- Met	bevlossiQ	. *		<b>×</b>			_		det /
0			, , , ,	871	107						(\(	-AC						×	 	$\left  \right $	Tar
.[]				NN	45-4	est	<u>ک</u>	uo =	18T	.w ':	X 31	.8(\	(OV)80928	×						$\left  \right $	and
	à	įĽ	enta	raue	05-3	educ	S	- CB	1 Z	808	/ S	əpic	bitseq 1808						 	┝╌┼	
				naue	ax ax	sis R	(*(	<b>)</b> \$'*	0dʻ	ZON	1' <sup>©</sup> 0	NʻIC	),7) snoinA				×		1		letho
	Ľ		envi	Alb	<u> </u>	naly		ST	IAT	οτ	- S	leta	M 8 AADA		×		-				<u>s</u>
			v.hal	μ	975	A		(9	SM	IS0	728	or (	01E8) HAA								lytic
·			~	kins l	345-3 345-3					(1	₽09	; po	EDB (Meth								Ana
			I	Haw	505-3					(1.	811	7 pc	ntem) H9T							$\square$	ee
				901	Tel. 5		16			)) 	0 <u>8</u>	9) (G	TPH 8015E								
				4	1			140 S	າວ)	n H		+∃8 +⊐⊂							 _	$\left  - \right $	emar
								1461	18)	2.8 	1 1	זבי ר⊐נ	BTEX+MATE						 		<u> </u>
	i				ent		S				0		HEAL NO. 804 BUS	400-				_			Date Time $\frac{4/2}{18/16}$ /10 Date Time
	ĺ	ļ	ഗ	Ó	I Eve		Hain			yne		6	<u> </u>								31
	Time:	□ Rus	Outfall	4 20-	mi-Annua	266	ger. Allen I	·		Tracy Pa	⊡r¥es	erature: (	Preservative Type	HCI	HNO <sub>3</sub>	HNO <sub>3</sub>	H₂SO₄	NEAT			4 4 4
	Turn-Around	X Standard	Project Name	Date:	Project #: Se	PO# 12623	Project Mana			Sampler:	On Ice:	Sample Temp	Container Type and #	40 ml VOA - 5	250 ml plastic-1	125 ml plastic-1	125 ml plastic-1	500 ml plastic-1			Received by: Received by: T.O.T
	stody Record	oomfield Terminal		4990	iield, NM 87413	4-1483	Hains@Andeavor.com		X Level 4 (Full Validation)				Sample Request ID	Outfall #2	Outfall #2	Outfall #2	Outfall #2	Outfall #2			un Ubule
	-of-Cu	avor - Bl		s: 50 CR	Bloom	915-53	Allen.S.				EXCEL		Matrix	H <sub>2</sub> O	H <sub>2</sub> O	H <sub>2</sub> O	H <sub>2</sub> O	H <sub>2</sub> O			Relinquishe
$\sim$	hain	Ande		Addres		#:	r Fax#:	ackage:	dard	Ļ	(Type).		Time	940		<u></u>					Time: //00 Time: (846
	ပ	Client		Mailing		Phone <b>3</b>	email oi	QA/QC F	□ Stan	□ Othe	X EDD		Date	4/20/18							Vzo/iB Date: 1/20/18

a	TAL									(N	or	<u> </u>	Air Bubbles									nalytes.		
	2			ი						S	[8]	i9M	bevlossid			×						let ⊿		
3	Ž	Ř		3710	07				1			_	Alk., CO 2		ļ			×				<u>l</u> arg		
•]	2			M	5-41	st				(	AC	<u>-</u> ^C	imə2) 0728			ļ			 	_		- u		
		28		ue.	5-34	ane	AJU A	BE or	ΤM	, <b>X</b>	3ΤE	9 (\	8260B(VO/	×						_		ls a		
	5	່ທ		uera	20	s Re	S,	PCB	82	08 /	/ S	əbi:	Ditee9 1808							_		Ho L		
	Ź		Nirol	pnq	Ea, .	lysis	( <sup>p</sup> (	05"0	d'''		<sup>1</sup> 0	N'IC	), A) anoinA				×					Mei		
		בי	aller	۲ ۱	ц С	Ana	•	SIV	10	<u>)</u> )T.	• s	lete	RCRA 8 Md		×	[				_		ical		
		Ş	r. N	N N N	-397			(5)		50Z	83.								 	_		alyt		
	Ì		S	vkins	-345		_			(1 °C	03 014	, pc							_	_	_	An		
				Hav	505-					(r 8 	) 	י אר ה) י							-+	+	+	See		
				1901	Tel.		 (	uo se	ອງ			+==								+	+	Tks:		
				•			V I	(1208	2) s		<u></u>	+==							_	+	-	ema		
[		1							 T												<u> </u> .			
,   ,				18	Event		lains			ne	ON D	S	HEAL NO. 1804B105	- 000								Date Time	4/20/13 /106	Date Time
	Time:	Rush	e: Outfalls	4-20-	emi-Annual	3266	ager: Allen H			Tracy Pay	⊡rYes	perature: O	Preservative Type	HCI	HNO3	HNO3	H₂SO₄	NEAT					Walt	U
	Turn-Around	X Standard	Project Nam	Date:	Project #: S6	PO# 1262;	Project Mana			Sampler	On Ice:	Sample Tem	Container Type and #	40 ml VOA - 5	250 ml plastic-1	125 ml plastic-1	125 ml plastic-1	500 ml plastic-1				Received by:	<i>₽~</i> ]. /	Received by:
	stody Record	oomfield Terminal		4990	ield, NM 87413	4-1483	Hains@Andeavor.com	V I curd 4 /Eurl Matina					Sample Request ID	Outfall #3	Outfall #3	Outfall #3	Outfall #3	Outfall #3				d by:		d by: , )
1	-of-Cu	avor - Bl		s: 50 CR	Bloom	915-534	Allen.S.			ieni	EXCEL		Matrix	H <sub>2</sub> O	H <sub>2</sub> O	H <sub>2</sub> O	H <sub>2</sub> O	H <sub>2</sub> O				Relinquishe	4	Relipquisher
	hain	Ande		Addres		;#: ;	ır Fax#:	Package:	nain	م ا	(Type).		Time	0945				1				Time:	1100	Time:
•		Client:	;	Mailing		Phone	email c	QA/QC		i otř ⊐	× EDC		Date	1/29/B				$\rightarrow$				Date:	120/18	Date:

(		(											)	ō	ы ш	
	hain	<u>-of-Cu</u>	istody Record	Turn-Around	Time:										Ē	
Client:	Andea	Ivor - B	loomfield Terminal	X Standard	🗆 Rush			רר		┙┝ ┥╏						۲,
				Project Name	e: San Juar	n River Out Paul				hallen	vironn	hental.o				;
Mailing	Address	50 CF	t 4990	Date:	<u>4</u> 20 -	18 NBB Collection	49(	)1 Hav	vkins N	А - Ш	lbuque	rque. I	VM 87.	109		
		Bloom	field, NM 87413	Project #: Se	mi-Annual	l Event	ur) Te	I. 505	345-39	75	Fax .	505-34	5-4107			
Phone	#:	915-53	4-1483	PO# 12623	3266					Ana	lysis F	sedues	st			
email o	ır Fax#:	Allen.S.	.Hains@Andeavor.com	Project Mana	ger: Allen H	lains	(/	(0		_	(†	ly s		•(	7 .	,
QA/QC	Package:						(luo (LZ	ЯW		(9	'OS'	E or CB	<u></u>	228	λir	
□ Stan	ndard		X Level 4 (Full Validation)				98) (80	/0Y		le SWI	₽0¢	9 28 871		suc	alir.	
□ Othe	۳.			Sampler:	<b>Tracy Pay</b>	/ne	s'a' D)H		(L.	sto]	' <sup>7</sup> 0	308 N'X		oin	AIK	(N
X EDD	(Type)_	EXCEL		On Ice:	⊟r¥es	DNo	MT	0 N	Þ09	L S	N' <sup>8</sup> (	: \ s	(∀(	ele: A	· - ·	or I
	1			Sample Tem	oerature: 🧷	2	3E+	ייי <u>י</u> פ(פ	g po	3 10 3 10 3 10	ЭN'I	∋bi ∃ (A	-^C	təM mə	uə 	<u>\</u>
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO.	atex+Mte		EDB (Method	0168) HAC	⊃,∃) anoinA	3081 Pestic	im92) 0728	bevlossiC	General Ch	λir Bubbles
4/ro/8	1220	H <sub>2</sub> O	Upstream	40ml VOA-5	НСІ	0100-		. ×			/	×	}	)   	<b>)</b>	/
<u> </u>		H <sub>2</sub> O	Upstream	250 ml amber-1	Neat	· ·		· ×				<u> </u>				
		H <sub>2</sub> O	Upstream	250 mf plastic-1	HNO3					×			_			
		H <sub>2</sub> O	Upstream	125 ml plastic-1	HNO <sub>3</sub>							<u> </u>		×		
		H <sub>2</sub> O	Upstream	125 ml plastic-1	H₂SO₄									×		
<b>&gt;</b>	<b>→</b>	H <sub>2</sub> O	Upstream	500 ml plastic-1	Neat										×	
															_	
		- - - -				i		_								
4/20/B	1430			Received by:	fort	Holif 1430	Remarks	 Sec	e Anal	vtical	Meth	ods a	nd Ta	irget	Anal	ytes
Date: ال ال	Time:	Relinquish	d by:	Réceived by:		Date Time طالـالي ميري										
1 abil x	> 1.01	ヨシー	1 - Alin Jer	) 1	3	1 (BULLS 74U										

č	, J					_						·	9	Ъ I	a		
Cnall	1-1-1-	ustody kecord	Turn-Around	Time:				I		Z		Ō	Z	Ż	Ā		
lient: And	eavor - E	loomfield Terminal	X Standard	□ Rush			] [			S S	2					,≻	
			Project Name	s: San Juan	River			3	ww.ha	llenvir	nmer	ntal.co	E		, , )	1	
lailing Addre	ss: <b>50 Cl</b>	R 4990	Date:	       			4901 H	ławkin	s NE	- Albu	duera	ue, N	M 871	60			
	Bloon	nfield, NM 87413	Project #: Se	mi-Annual	Event		Tel. 5	05-345	-3975	Ľ,	. 505 .	5-345	4107				
hone #:	915-5:	34-1483	PO# 12623	1266						Analys	is Rec	anest			:		
mail or Fax#	: Allen.S	.Hains@Andeavor.com	Project Mana	ger: Allen H	lains		() (/			· ····	S. (†	λµ	_	20			
A/QC Packag	ë					(12			(9	00		no ∃		၁၁န	yin		
] Standard		X Level 4 (Full Validation)				08)	SB5		SMI	le I	32 F	811		suc	iilsx		
] Other			Sampler:	Тгасу Рауі	ne	s'al	אנג. אונג	(1.	\$02 (1.11	toT	<sup>،د</sup> ص	N,X:		oin v	ЯIA	(N	,
CEDD (Type	) EXCEI		On Ice:	L Tes	No D	MT	אכ אר	811	728	s	/ S	ate	(\(	216J Åſ	- 'I	01	
			Sample Temp	serature: 🖉	Ś	3E+	9) ( +∃2	 7 pc	ou {	lete		I (A	) - \\C	ແອເ	ມອເ	<u>ک</u> (ک	
Date Timé	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. (804,000	BTEX+MTE		http://www.aga		ы 8 АЯЭЯ О 73 отория О 75 ото	 	8260B (VO	ime2) 0728	Deviossio	General Ch		<del></del>
20/8 1250	, H <sub>2</sub> O	North of 46	40ml VOA-5	HCI	1-00-		×					×					1
· · ·	H <sub>2</sub> O	North of 46	250 ml amber-1	Neat			×										<u> </u>
	H <sub>2</sub> O	North of 46	250 ml plastic-1	HNO <sup>3</sup>						×							
	H <sub>2</sub> O	North of 46	125 ml plastic-1	HNO <sub>3</sub>									<u> </u>	< X			
	H <sub>2</sub> O	North of 46	125 ml plastic-1	H₂SO₄										×			
$\uparrow$ $\uparrow$	H <sub>2</sub> O	North of 46	500 ml plastic-1	Neat											×		
								_									
							_		+		+		+	+-	_	-	-
													$\left  \right $				1 -1
Timo:			Dominal hu		Dato						=					-	
918 143			Received by.	F	4/20/5 1430	Rema	irks:	see Al	Jalyti	cal M	ethod	ls an	d lai	rget /	Analy	tes.	
ate: Time:		hed by:	Received by:	2	Date Time												
10/18/1841		when I Budlew 1			10/18 440												

Ċ		(	- - -							•			I		Ъ	2	1
5	-ulla	or-cu	stody kecord	Turn-Around	Time:						Z	21E			Z		
ent:	Andea	vor - Bl	oomfield Terminal	X Standard	□ Rush				2	Į	l S	- - - - - - - - - - - - - - - - - - -	AB S	20	Ĭ	R N	. >-
				Project Name	s San Juan	River ו			M	wv.ha	lenviro	nment	tal.cor	, E			
ailing /	Address.	50 CR	4990	Date:	4 -20-1	8	7	t901 ⊢	lawkin;	NE NE	Albud	Inerqu	le, NN	A 8710	0 0		
		Bloom	field, NM 87413	Project #: Se	mi-Annual	l Event		Tel. 5(	<b>35-345</b>	-3975	Fa	x 505	-345-4	4107			
none #		915-53	4-1483	PO# 12623	:266					4	nalysi	s Req	uest				
nail or	Fax#:	Allen.S.	Hains@Andeavor.com	Project Mana	ger. Allen H	łains	(/1	(O)		-		s,e	Λju		<sup>2</sup> 0	/	
A/QC P Stand	ackage: lard		X Level 4 (Full Validation)				(1208)			(SM	יש וו	5 PCF	o 381		ეფვი	(tinils	
Other				Sampler:	Tracy Payl	ne	s,g		(1.		sio]	808	M'X		oin	AIK	(N
EDD	Type)	EXCEL		On Ice:	⊡-Yes	Do No	MT	оЯ	811	228	L S	/ S	aτε	(A( 2151	∀۱	- 'i	orl
	•			Sample Temp	perature: <b>O</b>	Ĵ,Û	3E+	9) 8	p pc	3 10	etal	əpic	I (A	-\\C	ພອເ	ພອເ	Y) :
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO.	BTEX+MTE		HqtaM) Hqt		RCRA 8 Md	otry B081 Pestid	8260B (VO	meS) 0728 DevlossiO	General Cl	IC IsreneD	səlddu8 1iA
9/18	1320	H <sub>2</sub> O	Downstream	40ml VOA-5	НСІ	-008		×					×				
_		H <sub>2</sub> O	Downstream	250 ml amber-1	Neat			×									
		H <sub>2</sub> O	Downstream	250 ml plastic-1	HNO <sub>3</sub>						×						
		H <sub>2</sub> O	Downstream	125 ml plastic-1	HNO3									×	×		
		H <sub>2</sub> O	Downstream	125 ml plastic-1	H₂SO₄										×		
	$\rightarrow$	H <sub>2</sub> O	Downstream	500 ml plastic-1	Neat											X	
																+	
							_										
														$\left  \right $			$\left  - \right $
'		-	1			Dots Timo											
ا الالالة الالالة	1450 1450	Keinquisne	L	Received by:	-ted	4/10/18 1430	Rema	rs. S	ee Ar	Jalyti	cal Me	ithod	s anc		get A	nalyt	es.
te:	Time:	Relinquish∈ ∕^	price of the second s	Received by:	-	Date Time											
6(19)	181	WW /	1 statation	517	L	4/01/18 94C						•					

(	1	(	- - -				г						I	Q	P.	Ø	ľ
ບ 	hain	<u>of-Cu</u>	stody Record	Turn-Around	Time:				Ĩ		2		C	Z	2	Š	
Client:	Andea	Ivor - B	oomfield Terminal	X Standard	🗆 Rush						l S		AB		Ĭ	20	. >
				Project Name	e: San Juai	n River			>	wv.ha	llenviro	nmen	al.cor	ן י ן	) ) )		
Mailing	Address	50 CF	4990	Date:	<u>4-20-</u>	<u>0</u>		4901 H	Hawkin:	» NE	- Albuc	inerqu	e, NN	18710	ŋ		
		Bloom	field, NM 87413	Project #: Se	emi-Annua	l Event		Tel. 5	05-345	-3975	Fa	x 505	-345-	t107			
Phone :	#:	915-53	4-1483	PO# 12623	3266					1	nalysi	s Req	uest				
email o	r Fax#:	Allen.S.	.Hains@Andeavor.com	Project Mana	iger: Allen I	lains		() (/				S	ιjλ		20		
avac I 2421	Jackage:						(120	NMR Sino s		(SI	05-0	ЬСВ	no 38		)၂၇၇၃	Vilni	
	aaro		Level 4 (Full Validation)				8)s	<mark>ย</mark> อ	(		lst PG	280	τM		uo	kal	
□ Othe	-			Sampler:	Tracy Pay	ne	BI	Э/С )н,	(1.5	50Z	ог ОК	08	'X∃	s (	inA	IA .	(N
X EDD	(Type)_	EXCEL		On Ice:	⊡_Yes	Do	ν 1-	)ਮੁ 	314	852	sl sl	/ Se	ITA	AC Ist	/-'U	- 'u	10
				Sample Tem	perature: (	5.5	3E+	9) 8 +35	po	JO	eta bu u	) 9bic	(¥	)\-i 9M	uəu	นอน	(٨
Date	Time کی کی ک	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO. 1804B105	BTEX+MT		dieM) HGT		R 8 ARDA	oite∋9 1808	8260B (VO	mə2) 0728 Dissolved	General Cl	General Cl	Air Bubbles
4/29/18	No.	H <sub>2</sub> O	North of 45	40ml VOA-5	HCI	600-		×					×				
		H <sub>2</sub> O	North of 45	250 ml amber-1	Neat			×									
		H <sub>2</sub> O	North of 45	250 ml plastic-1	HNO3						×						
		H <sub>2</sub> O	North of 45	125 ml plastic-1	HNO <sub>3</sub>									×	×		
		H <sub>2</sub> O	North of 45	125 ml plastic-1	H₂SO₄										X		
<b>&gt;</b>	$\rightarrow$	H <sub>2</sub> O	North of 45	500 ml plastic-1	Neat											×	
														-			
Mate:	Time: 1430	Relinquish		Received by:	4	4 Date Time	Rem	irks:	see Ar	nalyti	al Me	thod	sanc	Tarç	jet ∧	naly	es.
Date:	Time:	Refinquishe	dby Walt	Received by:	s _X	4 Date Time	-										
				Ì	1												

# TABLE 2 Analytical Methods and Target Analytes Facility-Wide Groundwater Monitoring Plan - June 2014 Western Refining Southwest, Inc. - Bloomfield Terminal

<b>VOCs (EPA Method 8260B)</b> Target List         Benzene         Toluene         Ethylbenzene         Xylenes         Methyl tert butyl ether (MTBE) <b>WOCs - (EPA Method 8270)</b> - Method List <b>PH-GRO (EPA Method 8015B)</b> - Gasoline Range Organics <b>PH-DRO (EPA Method 8015B)</b> - Diesel Range Organics         - Motor Oil Range Organics         - Motor Oil Range Organics <b>Otal Carbon Dioxide (Laboratory Calculated)</b> - Dissolved CO2 <b>pecific Conductivity (EPA Method 120.1 or field measurement)</b> - Specific conductance <b>DS (EPA Method 160.1 or field measurement)</b> - Total dissolved solids <b>Seneral Chemistry - Anions (EPA Method 300.0)</b> Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)		-
Target List Benzene Toluene Ethylbenzene Xylenes Methyl tert butyl ether (MTBE) SVOCs - (EPA Method 8270) - Method List TPH-GRO (EPA Method 8015B) - Gasoline Range Organics TPH-DRO (EPA Method 8015B) - Diesel Range Organics - Motor Oil Range Organics - Dissolved CO2 - Dissolved CO2 - Dissolved CO2 - Disclific Conductivity (EPA Method 120.1 or field measurement) - Specific conductance DS (EPA Method 160.1 or field measurement) - Total dissolved solids - Total dissolved solids - Fluoride Chloride Bromide Nitrogen, Nitrite (as N) Nitrogen, Nitrite (as N) Phosphorous, Orthophosphate (As P)	VOCs (EPA Method 8260B) <sup>147</sup>	
Benzene Toluene Ethylbenzene Xylenes Methyl tert butyl ether (MTBE) SVOCs - CEPA Method 8270) - Method List (PH-GRO (EPA Method 8015B) - Gasoline Range Organics (PH-DRO (EPA Method 8015B) - Diesel Range Organics - Motor Oil Range Organics - Dissolved CO2 - Dissolved CO2 - Dissolved CO2 - Dissolved CO2 - Dissolved CO2 - Total dissolved solids - Tota	- Target List	
Toluene         Ethylbenzene         Xylenes         Methyl tert butyl ether (MTBE)         WOCs - (EPA Method 8270)         - Method List         TPH-GRO (EPA Method 8015B)         - Gasoline Range Organics         TPH-DRO (EPA Method 8015B)         - Diesel Range Organics         - Motor Oil Range Organics         - Motor Oil Range Organics         - Motor Oil Range Organics         - Dissolved CO2         ipecific Conductivity (EPA Method 120.1 or field measurement)         - Specific conductance         TDS (EPA Method 160.1 or field measurement)         - Total dissolved solids         Seneral Chemistry - Anions (EPA Method 300.0)         Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)	Benzene	
Ethylbenzene         Xylenes         Methyl tert butyl ether (MTBE)         VOCs - (EPA Method 8270)         - 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         - Motor Oil Range Organics <b>Fotal Carbon Dioxide (Laboratory Calculated)</b> - Dissolved CO2 <b>ipecific 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>Seneral Chemistry - Anions (EPA Method 300.0)</b> Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)	Toluene	
Xylenes         Methyl tert butyl ether (MTBE)         VOCs - (EPA Method 8270)         - 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>Fotal Carbon Dioxide (Laboratory Calculated)</b> - Dissolved CO2 <b>ipecific Conductivity (EPA Method 120.1 or field measurement)</b> - Specific conductance <b>TDS (EPA Method 160.1 or field measurement)</b> - Total dissolved solids         Seneral Chemistry - Anions (EPA Method 300.0)         Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)	Ethylbenzene	
Methyl tert butyl ether (MTBE)         WOCs - (EPA Method 8270)         - Method List         IPH-GRO (EPA Method 8015B)         - Gasoline Range Organics         TPH-DRO (EPA Method 8015B)         - Diesel Range Organics         - Motor Oil Range Organics         Fotal Carbon Dioxide (Laboratory Calculated)         - Dissolved CO2         Specific Conductivity (EPA Method 120.1 or field measurement)         - Specific conductance         TDS (EPA Method 160.1 or field measurement)         - Total dissolved solids         Seneral Chemistry - Anions (EPA Method 300.0)         Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)	Xylenes	
WOCs - (EPA Method 8270)         - Method List         IPH-GRO (EPA Method 8015B)         - Gasoline Range Organics         IPH-DRO (EPA Method 8015B)         - Diesel Range Organics         - Motor Oil Range Organics         Fotal Carbon Dioxide (Laboratory Calculated)         - Dissolved CO2         Specific Conductivity (EPA Method 120.1 or field measurement)         - Specific conductance         TDS (EPA Method 160.1 or field measurement)         - Total dissolved solids         Seneral Chemistry - Anions (EPA Method 300.0)         Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)	Methyl tert butyl ether (MTBE)	
Method List     PH-GRO (EPA Method 8015B)     Gasoline Range Organics     TPH-DRO (EPA Method 8015B)     Diesel Range Organics     Motor Oil Range Organics     Motor Oil Range Organics     Otal Carbon Dioxide (Laboratory Calculated)     Dissolved CO2     Decific Conductivity (EPA Method 120.1 or field measurement)     Specific conductance     DS (EPA Method 160.1 or field measurement)     Total dissolved solids     Seneral Chemistry - Anions (EPA Method 300.0)     Fluoride     Chloride     Bromide     Nitrogen, Nitrite (as N)     Nitrogen, Nitrate (as N)     Phosphorous, Orthophosphate (As P)	SVOCs - (EPA Method 8270)	
<b>PH-GRO (EPA Method 8015B)</b> - Gasoline Range Organics <b>PH-DRO (EPA Method 8015B)</b> - Diesel Range Organics         - Motor Oil Range Organics <b>Fotal Carbon Dioxide (Laboratory Calculated)</b> - Dissolved CO2 <b>Specific Conductivity (EPA Method 120.1 or field measurement)</b> - Specific conductance <b>DS (EPA Method 160.1 or field measurement)</b> - Total dissolved solids <b>Seneral Chemistry - Anions (EPA Method 300.0)</b> Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)	- Method List	
Gasoline Range Organics     (PH-DRO (EPA Method 8015B)     Diesel Range Organics     Motor Oil Range Organics     Motor Oil Range Organics     (Laboratory Calculated)     Dissolved CO2     (Decific Conductivity (EPA Method 120.1 or field measurement)     Specific conductance     (DS (EPA Method 160.1 or field measurement)         Total dissolved solids     Seneral Chemistry - Anions (EPA Method 300.0)     Fluoride     Chloride     Bromide     Nitrogen, Nitrite (as N)     Nitrogen, Nitrate (as N)     Phosphorous, Orthophosphate (As P)	TPH-GRO (EPA Method 8015B)	
<b>FPH-DRO (EPA Method 8015B)</b> - Diesel Range Organics         - Motor Oil Range Organics <b>Fotal Carbon Dioxide (Laboratory Calculated)</b> - Dissolved CO2 <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>Seneral Chemistry - Anions (EPA Method 300.0)</b> Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)	- Gasoline Range Organics	
Diesel Range Organics     Motor Oil Range Organics     Motor Oil Range Organics     Total Carbon Dioxide (Laboratory Calculated)     Dissolved CO2     Decific Conductivity (EPA Method 120.1 or field measurement)     Specific conductance     TDS (EPA Method 160.1 or field measurement)     Total dissolved solids     Seneral Chemistry - Anions (EPA Method 300.0)     Fluoride     Chloride     Bromide     Nitrogen, Nitrite (as N)     Nitrogen, Nitrate (as N)     Phosphorous, Orthophosphate (As P)	TPH-DRO (EPA Method 8015B)	
Motor Oil Range Organics     Fotal Carbon Dioxide (Laboratory Calculated)     Dissolved CO2     Decific Conductivity (EPA Method 120.1 or field measurement)     Specific conductance     TDS (EPA Method 160.1 or field measurement)     Total dissolved solids     Seneral Chemistry - Anions (EPA Method 300.0)     Fluoride     Chloride     Bromide     Nitrogen, Nitrite (as N)     Nitrogen, Nitrate (as N)     Phosphorous, Orthophosphate (As P)	- Diesel Range Organics	
Fotal Carbon Dioxide (Laboratory Calculated)         - Dissolved CO2         Specific Conductivity (EPA Method 120.1 or field measurement)         - Specific conductance <b>TDS (EPA Method 160.1 or field measurement)</b> - Total dissolved solids         Seneral Chemistry - Anions (EPA Method 300.0)         Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)	- Motor Oil Range Organics	
Dissolved CO2      Specific Conductivity (EPA Method 120.1 or field measurement)     - Specific conductance      TDS (EPA Method 160.1 or field measurement)     - Total dissolved solids      Seneral Chemistry - Anions (EPA Method 300.0)      Fluoride      Chloride      Bromide      Nitrogen, Nitrite (as N)     Nitrogen, Nitrate (as N)     Phosphorous, Orthophosphate (As P)	Total Carbon Dioxide (Laboratory Calculated)	
Specific Conductivity (EPA Method 120.1 or field measurement)         - Specific conductance <b>FDS (EPA Method 160.1 or field measurement)</b> - Total dissolved solids         Seneral Chemistry - Anions (EPA Method 300.0)         Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)	- Dissolved CO2	
- Specific conductance      TDS (EPA Method 160.1 or field measurement)     - Total dissolved solids      Seneral Chemistry - Anions (EPA Method 300.0)      Fluoride      Chloride      Bromide      Nitrogen, Nitrite (as N)     Nitrogen, Nitrate (as N)      Phosphorous, Orthophosphate (As P)	Specific Conductivity (EPA Method 120.1 or field measurement)	
FDS (EPA Method 160.1 or field measurement)         - Total dissolved solids         Seneral Chemistry - Anions (EPA Method 300.0)         Fluoride         Chloride         Bromide         Nitrogen, Nitrite (as N)         Nitrogen, Nitrate (as N)         Phosphorous, Orthophosphate (As P)	- Specific conductance	
- Total dissolved solids Seneral Chemistry - Anions (EPA Method 300.0) Fluoride Chloride Bromide Nitrogen, Nitrite (as N) Nitrogen, Nitrate (as N) Phosphorous, Orthophosphate (As P)	TDS (EPA Method 160.1 or field measurement)	
Seneral Chemistry - Anions (EPA Method 300.0) Fluoride Chloride Bromide Nitrogen, Nitrite (as N) Nitrogen, Nitrate (as N) Phosphorous, Orthophosphate (As P)	- Total dissolved solids	
Fluoride Chloride Bromide Nitrogen, Nitrite (as N) Nitrogen, Nitrate (as N) Phosphorous, Orthophosphate (As P)	General Chemistry - Anions (EPA Method 300.0)	
Chloride Bromide Nitrogen, Nitrite (as N) Nitrogen, Nitrate (as N) Phosphorous, Orthophosphate (As P)	Fluoride	
Bromide Nitrogen, Nitrite (as N) Nitrogen, Nitrate (as N) Phosphorous, Orthophosphate (As P)	Chloride	
Nitrogen, Nitrite (as N) Nitrogen, Nitrate (as N) Phosphorous, Orthophosphate (As P)	Bromide	
Nitrogen, Nitrate (as N) Phosphorous, Orthophosphate (As P)	Nitrogen, Nitrite (as N)	
Phosphorous, Orthophosphate (As P)	Nitrogen, Nitrate (as N)	
	Phosphorous, Orthophosphate (As P)	
Sulfate	Sulfate	
Jeneral Chemistry - Alkalinity (EPA Method 310.1)	General Chemistry - Alkalinity (EPA Method 310.1)	
Alkalinity, Total	Alkalinity, Total	
Carbonate	Carbonate	
Bicarbonate	Bicarbonate	

Total Recoverable Metals (EP.	A Method 6010B/7470)
- Target List (not applicable to F	Giver Terrace Sampling Events)
Arsenic	Lead
Barium	Mercury
Cadmium	Selenium
Chromium	Silver
- Target List (for River Terrace :	Sampling Events Only)
Lead	
Mercury (DW-1 ON	LY)
<b>Dissolved Metals (EPA Metho</b>	d 6010B / 7470)
- Target List (for Refinery Com	plex, Outfalls, and River)
, .	
Arsenic	Manganese
Arsenic Barium	Manganese Mercury
Arsenic Barium Cadmium	Manganese Mercury Potassium
Arsenic Barium Cadmium Calcium	Manganese Mercury Potassium Selenium
Arsenic Barium Cadmium Calcium Chromium	Manganese Mercury Potassium Selenium Silver
Arsenic Barium Cadmium Calcium Chromium Copper	Manganese Mercury Potassium Selenium Silver Sodium
Arsenic Barium Cadmium Calcium Chromium Copper Iron	Manganese Mercury Potassium Selenium Silver Sodium Uranium
Arsenic Barium Cadmium Calcium Chromium Copper Iron Lead	Manganese Mercury Potassium Selenium Silver Sodium Uranium Zinc
Arsenic Barium Cadmium Calcium Chromium Chromium Copper Iron Iron Lead Magnesium	Manganese Mercury Potassium Selenium Silver Sodium Uranium Zinc

TPH = total petroleum hydrocarbons GRO = gasoline range organics VOCs = volatile organic compounds DRO = diesel range organics TDS = total dissolved solids

.

### NOTES:

- 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 Piezomenter 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

June 19, 2018

Allen Hains Andeavor 111 CR 4990 Bloomfield, NM 87413 TEL: (505) 801-5616 FAX

RE: Semi Annual Groundwater

OrderNo.: 1805C34

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/23/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0901

Sincerely,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

**Analytical Report** Lab Order 1805C34

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/19/2018

20 5/23/2018 11:55:21 PM A51498

R51773

Analyst: MRA

50 6/5/2018 8:01:03 PM

CLIENT: An Project: Ser Lab ID: 180	ndeavor mi Annual Groundwater 05C34-001	Matrix: AQUEOUS	CI CI	ient Sa Collecti Receiv	imple ID ion Date ved Date	: See : 5/2 : 5/2	ep 1 2/2018 2:15:00 PM 3/2018 7:00:00 AM	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
CARBON DIC	OXIDE						Analyst:	MRA
Total Carbon	Dioxide	430	1.0	Н	mg CO2/	′ 1	5/29/2018 8:39:18 PM	R51585
EPA METHO	D 300.0: ANIONS						Analyst:	MRA
Fluoride		ND	0.50		mg/L	5	5/23/2018 11:42:57 PM	A51498
Chloride		270	10	*	mg/L	20	5/23/2018 11:55:21 PM	A51498
Nitrogen, Nitr	rite (As N)	ND	0.50		mg/L	5	5/23/2018 11:42:57 PM	A51498
Bromide		3.9	0.50		mg/L	5	5/23/2018 11:42:57 PM	A51498
Nitrogen, Nitr	rate (As N)	ND	0.50		mg/L	5	5/23/2018 11:42:57 PM	A51498

## SM2320B: ALKALINITY

Phosphorus, Orthophosphate (As P)

Sulfate

Bicarbonate (As CaCO3)	453.2	20.00	mg/L Ca 1	5/29/2018 8:39:18 PM	R51585
Carbonate (As CaCO3)	ND	2.000	mg/L Ca 1	5/29/2018 8:39:18 PM	R51585
Total Alkalinity (as CaCO3)	453.2	20.00	mg/L Ca 1	5/29/2018 8:39:18 PM	R51585

10

25

mg/L

mg/L

ND

1000

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

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 3 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

WO#: 1805C34

19-Jun-18

Client:	A	ndeavor											
Project:	Se	emi Ann	ual Groui	ndwa	ter								
Sample ID	MB		Samp	Гуре:	mb	lk	Tes	stCode: E	PA Method	300.0: Anions	5		
Client ID:	PBW		Batc	h ID:	A51	498	I	RunNo: 5	51498				
Prep Date:			Analysis [	Date:	5/2	23/2018	:	SeqNo: 1	677899	Units: <b>mg/L</b>			
Analyte			Result	PG	۱L	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride			ND	0.	10								
Chloride			ND	0.	50								
Nitrogen, Nitrite	e (As N)		ND	0.	10								
Bromide			ND	0.	10								
Nitrogen, Nitrat	te (As N)		ND	0.	10								
Phosphorus, O	rthophosphat	te (As P	ND	0.	50								
Sample ID	LCS		Samp	Гуре:	lcs		Tes	stCode: E	PA Method	300.0: Anions	6		
Client ID:	LCSW		Batc	h ID:	A51	498	I	RunNo: 5	51498				
Prep Date:			Analysis [	Date:	5/2	23/2018	:	SeqNo: 1	677900	Units: mg/L			
Analyte			Result	PG	۱L	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride			0.50	0.	10	0.5000	0	99.8	90	110			
Chloride			4.6	0.	50	5.000	0	92.1	90	110			
Nitrogen, Nitrite	e (As N)		0.94	0.	10	1.000	0	93.9	90	110			
Bromide			2.4	0.	10	2.500	0	94.2	90	110			
Nitrogen, Nitrat	te (As N)		2.4	0.	10	2.500	0	96.6	90	110			
Phosphorus, O	rthophosphat	te (As P	4.7	0.	50	5.000	0	94.7	90	110			
Sample ID	МВ		Samp	Гуре:	mb	lk	Tes	stCode: E	PA Method	300.0: Anions	5		
Client ID:	PBW		Batc	h ID:	R51	1773	I	RunNo: 5	51773				
Prep Date:			Analysis [	Date:	6/5	5/2018	:	SeqNo: 1	690242	Units: <b>mg/L</b>			
Analyte			Result	PG	۱L	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate			ND	0.	50								
Sample ID	LCS		Samp	Гуре:	lcs		Tes	stCode: E	PA Method	300.0: Anions	5		
Client ID:	LCSW		Batc	h ID:	<b>R5</b> 1	1773	I	RunNo: 5	51773				
Prep Date:			Analysis [	Date:	6/5	5/2018	:	SeqNo: 1	690243	Units: mg/L			
Analyte			Result	PG	۱۲	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate			9.2	0.	50	10.00	0	91.8	90	110			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 2 of 3

WO#:	1805C34
	19-Jun-18

Client:	1	Andeavor									
Project:	S	Semi Annual Grou	Indwater	•							
			-								
Sample ID	mb-1 alk	Samp	lype: m	blk	les	tCode: SI	M2320B: AI	kalinity			
Client ID:	PBW	Bate	ch ID: R	51585	F	RunNo: 5	1585				
Prep Date:		Analysis	Date: 5	/29/2018	5	SeqNo: 1	681637	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	lcs-1 alk	Samp	Type: Ic	S	Tes	tCode: SI	M2320B: AI	kalinity			
Client ID:	LCSW	Bate	ch ID: R	51585	F	RunNo: <b>5</b>	1585				
Prep Date:		Analysis	Date: 5	/29/2018	5	SeqNo: 1	681638	Units: mg/L	CaCO3		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	79.52	20.00	80.00	0	99.4	90	110			
Total Alkalinity Sample ID	mb-2 alk	) 79.52 : Samp	20.00 Type: <b>m</b>	80.00	0 Tes	99.4 tCode: <b>SI</b>	90 <b>M2320B: Al</b>	110 kalinity			
Total Alkalinity Sample ID Client ID:	mb-2 alk	) 79.52 Samp Bate	20.00 Type: m ch ID: R	80.00 blk 51585	0 Tes F	99.4 tCode: <b>SI</b> RunNo: <b>5</b>	90 M2320B: AI 1585	110 kalinity			
Total Alkalinity Sample ID Client ID: Prep Date:	mb-2 alk	) 79.52 Samp Bate Analysis	20.00 Type: <b>m</b> ch ID: <b>R</b> ! Date: <b>5</b>	80.00 blk 51585 /29/2018	0 Tes F	99.4 tCode: <b>SI</b> RunNo: <b>5</b> SeqNo: 10	90 M2320B: Al 1585 681662	110 kalinity Units: mg/L	_ CaCO3		
Total Alkalinity Sample ID Client ID: Prep Date: Analyte	mb-2 alk	) 79.52 Samp Bate Analysis Result	20.00 Type: m ch ID: R Date: 5 PQL	80.00 blk 51585 /29/2018 SPK value	0 Tes F SPK Ref Val	99.4 tCode: <b>SI</b> RunNo: <b>5</b> SeqNo: 10 %REC	90 M2320B: Al 1585 681662 LowLimit	110 <b>kalinity</b> Units: <b>mg/L</b> HighLimit	<b>- CaCO3</b> %RPD	RPDLimit	Qual
Total Alkalinity Sample ID Client ID: Prep Date: Analyte Total Alkalinity	mb-2 alk PBW	) 79.52 Samp Bate Analysis Result ) ND	20.00 Type: m ch ID: R Date: 5 PQL 20.00	80.00 blk 51585 /29/2018 SPK value	0 Tes F SPK Ref Val	99.4 tCode: <b>SI</b> RunNo: <b>5</b> SeqNo: <b>1</b> %REC	90 M2320B: Al 1585 681662 LowLimit	110 <b>kalinity</b> Units: <b>mg/L</b> HighLimit	- CaCO3 %RPD	RPDLimit	Qual
Total Alkalinity Sample ID Client ID: Prep Date: Analyte Total Alkalinity Sample ID	n (as CaCO3) mb-2 alk PBW n (as CaCO3) Ics-2 alk	) 79.52 Samp Bate Analysis Result ) ND Samp	20.00 Type: <b>m</b> ch ID: <b>R</b> ! Date: <b>5</b> PQL 20.00 Type: <b>Ic</b>	80.00 blk 51585 /29/2018 SPK value	0 Tes F SPK Ref Val Tes	99.4 tCode: <b>SI</b> RunNo: <b>5</b> SeqNo: <b>1</b> %REC tCode: <b>SI</b>	90 M2320B: AI 1585 681662 LowLimit M2320B: AI	110 kalinity Units: mg/L HighLimit kalinity	<b>- CaCO3</b> %RPD	RPDLimit	Qual
Total Alkalinity Sample ID Client ID: Prep Date: Analyte Total Alkalinity Sample ID Client ID:	r (as CaCO3) mb-2 alk PBW (as CaCO3) ics-2 alk LCSW	) 79.52 Samp Bate Analysis Result ) ND Samp Bate	20.00 Type: <b>m</b> ch ID: <b>R</b> Date: <b>5</b> PQL 20.00 Type: <b>Ic</b> ch ID: <b>R</b>	80.00 blk 51585 /29/2018 SPK value s 51585	0 Tes SPK Ref Val Tes F	99.4 tCode: <b>SI</b> RunNo: <b>5</b> SeqNo: 10 %REC tCode: <b>SI</b> RunNo: <b>5</b>	90 M2320B: AI 1585 681662 LowLimit M2320B: AI 1585	110 kalinity Units: mg/L HighLimit kalinity	- CaCO3 %RPD	RPDLimit	Qual
Total Alkalinity Sample ID Client ID: Prep Date: Analyte Total Alkalinity Sample ID Client ID: Prep Date:	r (as CaCO3) mb-2 alk PBW r (as CaCO3) Ics-2 alk LCSW	) 79.52 Samp Bate Analysis Result ND Samp Bate Analysis	20.00 Type: <b>m</b> ch ID: <b>R</b> Date: <b>5</b> PQL 20.00 Type: <b>Ic</b> ch ID: <b>R</b> Date: <b>5</b>	80.00 blk 51585 /29/2018 SPK value s 51585 /29/2018	0 Tes SPK Ref Val Tes F	99.4 tCode: SI RunNo: 5 SeqNo: 10 %REC tCode: SI RunNo: 5 SeqNo: 10	90 M2320B: Al 1585 681662 LowLimit M2320B: Al 1585 681663	110 kalinity Units: mg/L HighLimit kalinity Units: mg/L	- CaCO3 %RPD	RPDLimit	Qual
Total Alkalinity Sample ID Client ID: Prep Date: Analyte Total Alkalinity Sample ID Client ID: Prep Date: Analyte	mb-2 alk PBW (as CaCO3) (cs-2 alk LCSW	) 79.52 Samp Bate Analysis Result ) ND Samp Bate Analysis Result	20.00 Type: <b>m</b> ch ID: <b>R</b> ! Date: <b>5</b> <u>PQL</u> 20.00 Type: <b>Ic</b> ch ID: <b>R</b> ! Date: <b>5</b> PQL	80.00 blk 51585 /29/2018 SPK value 51585 /29/2018 SPK value	0 Tes SPK Ref Val Tes F SPK Ref Val	99.4 tCode: SI RunNo: 5 SeqNo: 10 %REC tCode: SI RunNo: 5 SeqNo: 10 %REC	90 M2320B: Al 1585 681662 LowLimit M2320B: Al 1585 681663 LowLimit	110 kalinity Units: mg/L HighLimit kalinity Units: mg/L HighLimit	- CaCO3 %RPD - CaCO3 %RPD	RPDLimit	Qual

- \* 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
- PQL Practical Quanitative Limit
- 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
- **D**\_\_\_\_
  - Page 3 of 3

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental 31b TEL: 505-345-3975 Website' www.ha	Analysis L -1901 Ha uquerque. 1 FAX: 505- tllenvironm	abaratary nukins NE AM 87109 345-4107 ental com	Sar	mple Log-In Check List	ì
Client Name ANDEAVOR BLOOMFIEL	Work Order Number	1805C34	és je		RoptNo 1	
Received By: Anne Thorne	5/23/2018 7:00:00 AM		4	In A.	L	
Completed By Michelle Garcia	5/23/2018 9 24 29 AM		tr	Junel (	Conce)	
Reviewed By 51 05/23/18					Labeled by MW Starl	8
Chain of Custody					510011	9
1 Is Chain of Custody complete?		Yes 🗸		No 🗍	Not Present	
2. How was the sample delivered?		Courier				
Log In 3. Was an attempt made to cool the samples?		Yes 🔽	r	No 🗌		
<ol> <li>Were all samples received at a temperature</li> </ol>	of >0° C to 6.0°C	Vec V	N	No 🗌		
5. Sample(s) in proper container(s)?		Yes V		40 🖂		
6 Sufficient sample volume for indicated test/s	12	Voc V	N			
7 Are samples (excent VOA and ONG) proper	v nroseeved?	Vos V	N			
8. Was preservative added to bottles?	) madride	Yes	N	io 🖌	NA	
9 VOA vials have zero needspace?		Yes 🗌	N	0	No VOA Viale	
10. Were any sample containers received broke	n?	Yes 🗆		40 🗹	# of preserved	/
11. Does paperwork match bottle tabels? (Note discrepancies on chain of custody)		Yes 🗹	8	lo. 🗍	tor pH	i)
12 Are matrices correctly identified on Chain of	Gustody?	Yes 🖌	N	0	Mapilysled?	
3. Is it clear what analyses were requested?		Yes 🗹	N	0	100	
14. Were all holding times able to be met? (If no notify customer for authorization)		Yes 🖌	N	0	Checked by	
Special Handling (if applicable)						
15 Was client notified of all discrepancies with	this order?	Yes 🗌		No 🗆	NA 🔽	
Person Notified	Date.		-			
By Whom	Via	eMail	Phone	Fax	In Person	
Regarding						
Clent Instructions:						
16. Additional remarks:						
17 Cooler Information						
Cooler No Temp °C   Condition   S	eal Intact   Seal No   S	cal Date	Signe	d By	Ĩ	
1 1.0 Good Ye	5		- grid			

Client.       Allen       Mains       Woshevry       Standar         50       CR       4990       Project Nan         Mailing Address:       Bloo wReld, NM       Seturi         Phone #:       (915) 490 – 1594       Project #:         Phone #:       (915) 490 – 1594       Project Mar         Calandar       & Level 4 (Full Validation)       Al         Adcreditation       Sampler:       On los:         Date       Time       Matrix       Sample Request ID         Date       Time       Matrix       Sample Request ID	a - Annual Groundwater 12623266 ager:		ENVIRONME YSIS LABORA environmental.com	NTAL
FO     CR     H940     Project Nan       Mailing Address:     Bloo wRild, NM     Sewi       Phone #:     (915) 490 – 1594     Project #:       Phone #:     (915) 490 – 1594     Project Mar       Cavoc Package:     Sample Autor (com     Project Mar       Cavoc Package:     Sampler:     On los:       Carceditation     Sampler:     On los:       I NELAP     Other     Sampler:       Date     Time     Matrix     Sample Request ID	e: - Amural Grocundwater 12623266 ager:		environmental.com	INO IN
Mailing Address:     Bloo wR:Id     NM     Seuri       Phone #:     (915) 490 - 1594     Project #:       Phone #:     (915) 490 - 1594     Project Mar       Mail or Fax#:     Miley, S, MainSé Audea win, (em     Project Mar       Main or Fax#:     Miley, S, MainSé Audea win, (em     Project Mar       Main or Fax#:     Miley, S, MainSé Audea win, (em     Project Mar       Main or Fax#:     Miley, S, MainSé Audea win, (em     Project Mar       Main or Fax#:     Miley, S, MainSé Audea win, (em     Pinject Mar       Main or Fax#:     Miley, S, MainSé Audea win, (em     Pinject Mar       Main or Fax#:     Miley, S, MainSé Audea win, (em     Pinject Mar       Main or Fax#:     Miley, S, MainSé Audea win, (em     Pinject Mar       Main or Fax#:     Miley     Full Validation)     Al       Accreditation     Miley     Sampler:     On los:       Matrix     Sample Request ID     Troe and #	-Annual Groundwater 12623266 ager:			
Phone #:     (915) 490 - 1594     Project #:       Phone #:     (915) 490 - 1594     Project #:       Phone #:     (915) 490 - 1594     Project Mar       Phone #:     (915) 410 - 1594     Project Mar       Phone #:     Aller.     Sampler:       Phone #:     Phone #     Sampler:       Phone Plate     Dother     Sampler:       Phone     Date     Matrix       Phone     Phone     Sampler:	12623266 ager:	4901 Hawkins NE -	Albuquerone NM 87100	
Phone #:     (915) 490 - 1594     P0#       email or Fax#:     Aller, S. Havis & Anderwon. (em. Project Mar 0A/0C Package:     Project Mar       0A/0C Package:     Istandard     Istandard       I Standard     Istandard     Istandarion       I Standard     Istandard     Istandarion       I Standard     Istandarion     Istandarion       I NELAP     Istandarion     Istandarion       I NELAP     Istandarion     Istandarion       I NELAP     Istandarion     Istandarion       I Sampler     Istandarion     Istandarion       I EDD (Type)     Istandarion     Istandarion       I Time     Matrix     Istandarion       I Time     Matrix     Istandarion	12623266 ager:	Tel. 505-345-3975	Fax 505-345-4107	
ernail or Fax#. All Co., S. Havin Com Project Mar QA/OC Package: Calandard Standard Standardon Alexandre (Full Validation) Alexandre Container Sampler: Cample Ten Cantaner Container Date Time Matrix Sample Request ID Container Type and #	ager:	Ar	nalysis Request	
ØA/OC Package:     I Standard     I Standard     I Nalidation)       Accreditation     I Sampler:     On loe:       I NELAP     I Other     On loe:       I EDD (Type)     Sample Ten       Date     Time     Matrix       Date     Time     Matrix		(O) (() )	E	
Image: Standard     Image: Standard     Image: Standard       Accreditation     A Level 4 (Full Validation)     A       Accreditation     Sampler:     On loe:       Image: NELAP     Other     On loe:       Image: Ten     Sample Ten     Sample Ten       Image: Ten     Matrix     Sample Request ID     Troe and #		1208 as or MF MF (SI	s.80 DS'*(	012
Accreditation     Sampler.       INELAP     Other       INELAP     Sampler       INELAP     Sampler       Intellet     Matrix       Sample Request ID     Type and #	en Hains	OX OX (G	) s ba	
Time Matrix Sample Request ID Type and #	nichael A Wicker	02 (1 (1 (1 (1 Hd.	2'0' 808 20N	0
C EDD (Type) Sample Ten Date Time Matrix Sample Request ID Type and #	X Yes DNO	82 94' 18' 40	4 <sup>.6</sup> 04	77
Date Time Matrix Sample Request ID Container	iperature: /.0	0 ot oq 2 9 (Cl 9 (Cl 9 (Cl 9 (Cl	slete (A) (A)	14
	Preservative Type 1805C 34	PTEX + MT BTEX + MT TPH 8015B TPH (Metho TPH	8 маяря Аліона (F.C. 1808 (YO) 8081 Резца 80505 (VO) 80810 (VO) 80810 (YO) 80810 (YO)	A) Kahun
5-22-18 1415 6W Seep 1 1-Paly	(00/ -00)		X	×
- /			1	
			15 APU	
1				
/				
/				
	All			
	121			
Date: Time: Relinquished by: Received by:	Date Time	Distance of the		-
5-22-18 520 Jee Onuch	shipel Stalls 1520	remarks: LY VE	rified analysis	vition
Date: Time: Relinquistied by 12/15/18/1820 PUNGE Date	Alar Jose S/23/A	ALLEN	and Matt. M	11/22/20-1

### TABLE 2

### Analytical Methods and Target Analytes Facility-Wide Groundwater Monitoring Plan - June 2018 Western Refining Southwest, Inc. - Bloomfield Refinery

VOCs (EPA Method 8260B) (1)	Total Recoverable Metals (EPA Method 6010B/7470)
- Target List Benzene Toluene Ethylbenzene Xylenes Methyl tert butyl ether (MTBE) SVOCs - (EPA Method 8270) - Method List TPH-GRO (EPA Method 8015B)	Target List (not applicable to River Terrace Sampling Events)     Arsenic Lead     Bartum Mercury     Cadmium Selenium     Chromtum Silver      Target List (for River Terrace Sampling Events Only)     Lead     Mercury (DW-1 ONLY)
- Gasoline Range Organics	Dissolved Metals (EPA Method 6010B / 7470)
TPH-DRO (EPA Method 8015B)	- Target List (for Refinery Complex, Outfalls, and River)
- Diesel Range Organics	Arsenic Manganese
- Motor Oil Range Organics	Barium Mercury
Total Carbon Dioxide (Laboratory Calculated)	Cadmium Potassium
- Dissolved CO2	Calcium Selenium
Specific Conductivity (EPA Method 120.1 or field measurement)	Chromium Silver
- Specific conductance	Copper Sodium
TDS (EPA Method 160.1 or field measurement)	Iron Uranium
- Total dissolved solids	Lead Zinc
General Chemistry - Anions (EPA Method 300.0) Fluoride Chloride Beomide	Magnesium
Nitrogen, Nitrite (as N)	GRO – gasoline range organics
Nitrogen, Nitrate (as N)	VOCs = volatile organic compounds
Phosphorous, Orthophosphate (As P)	DRO – diesel range organics
Sulfate	TDS = total dissolved solids
General Chemistry - Alkalinity (EPA Method 310.1) Alkalinity, Total Carbonate Bicarbonate	

### NOTES:

- 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 Piezomenter 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

August 22, 2018

Allen Hains Andeavor Bloomfield 111 CR 4990 Bloomfield, NM 87413 TEL: (915) 534-1483 FAX

RE: San Juan River and RCRA Wells

OrderNo.: 1808248

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 14 sample(s) on 8/4/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0901

Sincerely,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1808248 Date Reported: 8/22/2018

Analyst: pmf

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: Upstream

CLIENT: Andeavor BloomfieldProject: San Juan River and RCRA WellsLab ID: 1808248-001

**Collection Date:** 8/2/2018 2:45:00 PM

Matrix: AQUEOUS Received Date: 8/4/2018 10:15:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE					Analyst	Irm
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	8/9/2018 4:50:23 PM	39667
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	8/9/2018 4:50:23 PM	39667
Surr: DNOP	79.3	76.6-135	%Rec	1	8/9/2018 4:50:23 PM	39667
EPA METHOD 300.0: ANIONS					Analyst	MRA
Fluoride	0.13	0.10	mg/L	1	8/7/2018 4:34:24 PM	R53287
Chloride	2.5	0.50	mg/L	1	8/7/2018 4:34:24 PM	R53287
Bromide	ND	0.10	mg/L	1	8/7/2018 4:34:24 PM	R53287
Phosphorus, Orthophosphate (As P)	ND	0.50	mg/L	1	8/7/2018 4:34:24 PM	R53287
Sulfate	43	0.50	mg/L	1	8/7/2018 4:34:24 PM	R53287
Nitrate+Nitrite as N	ND	1.0	mg/L	5	8/7/2018 11:52:16 PM	R53285
SM2320B: ALKALINITY					Analyst	sat
Bicarbonate (As CaCO3)	82.16	20.00	mg/L Ca	1	8/8/2018 2:05:45 PM	R53305
Carbonate (As CaCO3)	ND	2.000	mg/L Ca	1	8/8/2018 2:05:45 PM	R53305
Total Alkalinity (as CaCO3)	82.16	20.00	mg/L Ca	1	8/8/2018 2:05:45 PM	R53305
EPA METHOD 7470: MERCURY					Analyst	rde
Mercury	ND	0.00020	mg/L	1	8/6/2018 6:45:14 PM	39609
EPA METHOD 7470: MERCURY					Analyst	rde
Mercury	ND	0.00020	mg/L	1	8/17/2018 11:30:30 AM	39834
EPA METHOD 6010B: DISSOLVED METALS					Analyst	pmf
Arsenic	ND	0.020	mg/L	1	8/13/2018 4:56:46 PM	B53393
Barium	0.066	0.020	mg/L	1	8/13/2018 1:52:57 PM	A53393
Cadmium	ND	0.0020	mg/L	1	8/13/2018 1:52:57 PM	A53393
Calcium	30	1.0	mg/L	1	8/13/2018 1:52:57 PM	A53393
Chromium	ND	0.0060	mg/L	1	8/13/2018 1:52:57 PM	A53393
Copper	ND	0.0060	mg/L	1	8/13/2018 1:52:57 PM	A53393
Iron	ND	0.020	mg/L	1	8/13/2018 1:52:57 PM	A53393
Lead	ND	0.0050	mg/L	1	8/13/2018 1:52:57 PM	A53393
Magnesium	5.3	1.0	mg/L	1	8/13/2018 1:52:57 PM	A53393
Manganese	0.0022	0.0020	mg/L	1	8/13/2018 1:52:57 PM	A53393
Potassium	1.6	1.0	mg/L	1	8/13/2018 1:52:57 PM	A53393
Selenium	ND	0.050	mg/L	1	8/13/2018 1:52:57 PM	A53393
Silver	ND	0.0050	mg/L	1	8/13/2018 1:52:57 PM	A53393
Sodium	15	1.0	mg/L	1	8/13/2018 1:52:57 PM	A53393
Uranium	ND	0.10	mg/L	1	8/13/2018 6:27:38 PM	A53387
Zinc	0.086	0.020	mg/L	1	8/13/2018 1:52:57 PM	A53393

### EPA 6010B: TOTAL RECOVERABLE METALS

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank						
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range						
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 52						
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range						
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit						
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified						
CLIENT:	Andeavor Bloomfield		Client Sample ID: Upstream							
-----------	--------------------------	--------------	--------------------------------------	---------------------	---------------	----------------------	--------	--	--	--
Project:	San Juan River and RCRA	Wells	Collection Date: 8/2/2018 2:45:00 PM							
Lab ID:	1808248-001	Matrix: AQUE	OUS	<b>Received Dat</b>	<b>e:</b> 8/-	4/2018 10:15:00 AM				
Analyses	3	Result	PQL	Qual Units	DF	Date Analyzed	Batch			
EPA 601	0B: TOTAL RECOVERABLE	METALS				Analyst	: pmf			
Arsenic		ND	0.020	mg/L	1	8/8/2018 11:39:25 AM	39612			
Barium		0.16	0.020	mg/L	1	8/7/2018 6:55:30 PM	39612			
Cadmiur	n	ND	0.0020	mg/L	1	8/7/2018 6:55:30 PM	39612			
Chromiu	m	ND	0.0060	mg/L	1	8/7/2018 6:55:30 PM	39612			
Lead		ND	0.0050	mg/L	1	8/7/2018 6:55:30 PM	39612			
Seleniur	n	ND	0.050	mg/L	1	8/7/2018 6:55:30 PM	39612			
Silver		ND	0.0050	mg/L	1	8/7/2018 6:55:30 PM	39612			
EPA ME	THOD 8015D: GASOLINE RA	NGE				Analyst	: AG			
Gasoline	e Range Organics (GRO)	ND	0.050	mg/L	1	8/7/2018 12:16:41 AM	A53243			
Surr:	BFB	103	70-130	%Rec	1	8/7/2018 12:16:41 AM	A53243			
EPA ME	THOD 8260: VOLATILES SHO	ORT LIST				Analyst	: AG			
Benzene	9	ND	1.0	µg/L	1	8/7/2018 12:16:41 AM	B53243			
Toluene		ND	1.0	µg/L	1	8/7/2018 12:16:41 AM	B53243			
Ethylber	izene	ND	1.0	µg/L	1	8/7/2018 12:16:41 AM	B53243			
Methyl te	ert-butyl ether (MTBE)	ND	1.0	μg/L	1	8/7/2018 12:16:41 AM	B53243			
Xylenes,	, Total	ND	1.5	µg/L	1	8/7/2018 12:16:41 AM	B53243			
Surr:	4-Bromofluorobenzene	117	70-130	%Rec	1	8/7/2018 12:16:41 AM	B53243			
Surr:	Toluene-d8	104	70-130	%Rec	1	8/7/2018 12:16:41 AM	B53243			

Hall Environmental Analysis Laboratory, Inc.

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

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- D Sample Diluced Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 2 of 52
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

R53287 R53287 R53287 R53287 R53287 R53285

R53305 R53305 R53305

B53393 A53393 
A53387

A53393

Analyst: pmf

8/13/2018 6:31:06 PM

8/13/2018 2:02:14 PM

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

Client Sample ID: North of MW#45 Collection Date: 8/2/2018 3:45:00 DM

Project:	San Juan River and RCRA Wells		(	Collection Date	: 8/2	2/2018 3:45:00 PM	
Lab ID:	1808248-002	Matrix: AQUE	OUS	<b>Received Date</b>	: 8/4	4/2018 10:15:00 AM	
Analyses		Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015D: DIESEL RANGE					Analyst	: Irm
Diesel R	ange Organics (DRO)	ND	0.40	mg/L	1	8/9/2018 5:56:46 PM	39667
Motor Oi	I Range Organics (MRO)	ND	2.5	mg/L	1	8/9/2018 5:56:46 PM	39667
Surr: I	DNOP	79.8	76.6-135	%Rec	1	8/9/2018 5:56:46 PM	39667
EPA MET	THOD 300.0: ANIONS					Analyst	MRA
Fluoride		0.14	0.10	mg/L	1	8/7/2018 5:48:51 PM	R5328
Chloride		2.7	0.50	mg/L	1	8/7/2018 5:48:51 PM	R5328
Bromide		ND	0.10	mg/L	1	8/7/2018 5:48:51 PM	R5328
Phospho	orus, Orthophosphate (As P)	ND	0.50	mg/L	1	8/7/2018 5:48:51 PM	R5328
Sulfate		42	0.50	mg/L	1	8/7/2018 5:48:51 PM	R5328
Nitrate+	Nitrite as N	ND	1.0	mg/L	5	8/8/2018 12:04:41 AM	R5328
SM2320E	3: ALKALINITY					Analyst	: sat
Bicarbor	nate (As CaCO3)	82.08	20.00	mg/L Ca	1	8/8/2018 2:13:08 PM	R5330
Carbona	te (As CaCO3)	ND	2.000	mg/L Ca	1	8/8/2018 2:13:08 PM	R5330
Total Alk	alinity (as CaCO3)	82.08	20.00	mg/L Ca	1	8/8/2018 2:13:08 PM	R5330
EPA MET	THOD 7470: MERCURY					Analyst	: rde
Mercury		ND	0.00020	mg/L	1	8/6/2018 6:47:31 PM	39609
EPA MET	THOD 7470: MERCURY					Analyst	: rde
Mercury		ND	0.00020	mg/L	1	8/17/2018 11:32:46 AN	39834
EPA MET	THOD 6010B: DISSOLVED METAL	S				Analyst	: pmf
Arsenic		ND	0.020	mg/L	1	8/13/2018 5:05:28 PM	B53393
Barium		0.065	0.020	mg/L	1	8/13/2018 2:02:14 PM	A53393
Cadmiur	n	ND	0.0020	mg/L	1	8/13/2018 2:02:14 PM	A53393
Calcium		30	1.0	mg/L	1	8/13/2018 2:02:14 PM	A53393
Chromiu	m	ND	0.0060	mg/L	1	8/13/2018 2:02:14 PM	A53393
Copper		ND	0.0060	mg/L	1	8/13/2018 2:02:14 PM	A53393
Iron		ND	0.020	mg/L	1	8/13/2018 2:02:14 PM	A53393
Lead		ND	0.0050	mg/L	1	8/13/2018 2:02:14 PM	A53393
Magnesi	um	5.2	1.0	mg/L	1	8/13/2018 2:02:14 PM	A53393
Mangan	ese	0.0028	0.0020	mg/L	1	8/13/2018 2:02:14 PM	A53393
Potassiu	Im	1.7	1.0	mg/L	1	8/13/2018 2:02:14 PM	A53393
Seleniun	n	ND	0.050	mg/L	1	8/13/2018 2:02:14 PM	A53393
Silver		ND	0.0050	mg/L	1	8/13/2018 2:02:14 PM	A53393
Sodium		15	1.0	mg/L	1	8/13/2018 2:02:14 PM	A53393

#### EPA 6010B: TOTAL RECOVERABLE METALS

Uranium

Zinc

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

0.10

0.020

mg/L

mg/L

1

1

ND

0.11

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 52
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	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.

San Juan River and RCRA Wells

**CLIENT:** Andeavor Bloomfield

1808248-002

**Project:** 

Lab ID:

Client Sample ID: North of MW#45 Collection Date: 8/2/2018 3:45:00 PM Received Date: 8/4/2018 10:15:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS					Analyst	: pmf
Arsenic	ND	0.020	mg/L	1	8/8/2018 11:40:59 AM	39612
Barium	0.17	0.020	mg/L	1	8/7/2018 6:56:57 PM	39612
Cadmium	ND	0.0020	mg/L	1	8/7/2018 6:56:57 PM	39612
Chromium	ND	0.0060	mg/L	1	8/7/2018 6:56:57 PM	39612
Lead	0.0056	0.0050	mg/L	1	8/7/2018 6:56:57 PM	39612
Selenium	ND	0.050	mg/L	1	8/7/2018 6:56:57 PM	39612
Silver	ND	0.0050	mg/L	1	8/7/2018 6:56:57 PM	39612
EPA METHOD 8015D: GASOLINE RANGE					Analyst	AG
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/7/2018 1:25:58 AM	A53243
Surr: BFB	104	70-130	%Rec	1	8/7/2018 1:25:58 AM	A53243
EPA METHOD 8260: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	1.0	µg/L	1	8/7/2018 1:25:58 AM	B53243
Toluene	ND	1.0	µg/L	1	8/7/2018 1:25:58 AM	B53243
Ethylbenzene	ND	1.0	µg/L	1	8/7/2018 1:25:58 AM	B53243
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/7/2018 1:25:58 AM	B53243
Xylenes, Total	ND	1.5	µg/L	1	8/7/2018 1:25:58 AM	B53243
Surr: 4-Bromofluorobenzene	117	70-130	%Rec	1	8/7/2018 1:25:58 AM	B53243
Surr: Toluene-d8	104	70-130	%Rec	1	8/7/2018 1:25:58 AM	B53243

Matrix: AQUEOUS

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

**Oualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Analyst: pmf

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: North of MW#46 Collection Date: 8/2/2018 4:35:00 PM

Project:	San Juan River and	RCRA Wells	
Lab ID:	1808248-003	Matrix	: AQUEOUS

**CLIENT:** Andeavor Bloomfield

**Received Date:** 8/4/2018 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst	Irm
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	8/9/2018 6:19:02 PM	39667
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/9/2018 6:19:02 PM	39667
Surr: DNOP	78.0	76.6-135		%Rec	1	8/9/2018 6:19:02 PM	39667
EPA METHOD 300.0: ANIONS						Analyst	MRA
Fluoride	0.14	0.10		mg/L	1	8/7/2018 6:13:40 PM	R53287
Chloride	2.5	0.50		mg/L	1	8/7/2018 6:13:40 PM	R53287
Bromide	ND	0.10		mg/L	1	8/7/2018 6:13:40 PM	R53287
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2018 6:13:40 PM	R53287
Sulfate	43	0.50		mg/L	1	8/7/2018 6:13:40 PM	R53287
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/8/2018 12:54:20 AM	R53285
SM2320B: ALKALINITY						Analyst	sat
Bicarbonate (As CaCO3)	82.52	20.00		mg/L Ca	1	8/8/2018 2:20:31 PM	R53305
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/8/2018 2:20:31 PM	R53305
Total Alkalinity (as CaCO3)	82.52	20.00		mg/L Ca	1	8/8/2018 2:20:31 PM	R53305
EPA METHOD 7470: MERCURY						Analyst	rde
Mercury	ND	0.00020		mg/L	1	8/6/2018 6:54:26 PM	39609
EPA METHOD 7470: MERCURY						Analyst	rde
Mercury	ND	0.00020		mg/L	1	8/17/2018 11:44:16 AM	39834
EPA METHOD 6010B: DISSOLVED METALS						Analyst	pmf
Arsenic	ND	0.020		mg/L	1	8/13/2018 5:06:54 PM	B53393
Barium	0.065	0.020		mg/L	1	8/13/2018 2:04:03 PM	A53393
Cadmium	ND	0.0020		mg/L	1	8/13/2018 2:04:03 PM	A53393
Calcium	31	1.0		mg/L	1	8/13/2018 2:04:03 PM	A53393
Chromium	ND	0.0060		mg/L	1	8/13/2018 2:04:03 PM	A53393
Copper	ND	0.0060		mg/L	1	8/13/2018 2:04:03 PM	A53393
Iron	0.021	0.020		mg/L	1	8/13/2018 2:04:03 PM	A53393
Lead	ND	0.0050		mg/L	1	8/13/2018 2:04:03 PM	A53393
Magnesium	5.2	1.0		mg/L	1	8/13/2018 2:04:03 PM	A53393
Manganese	0.0079	0.0020		mg/L	1	8/13/2018 2:04:03 PM	A53393
Potassium	1.7	1.0		mg/L	1	8/13/2018 2:04:03 PM	A53393
Selenium	ND	0.050		mg/L	1	8/13/2018 2:04:03 PM	A53393
Silver	ND	0.0050		mg/L	1	8/13/2018 2:04:03 PM	A53393
Sodium	15	1.0		mg/L	1	8/13/2018 2:04:03 PM	A53393
Uranium	ND	0.10		mg/L	1	8/13/2018 6:32:14 PM	A53387
Zinc	0.081	0.020		mg/L	1	8/13/2018 2:04:03 PM	A53393

#### EPA 6010B: TOTAL RECOVERABLE METALS

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 52
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

8/7/2018 2:35:09 AM

B53243

CLIENT	: Andeavor Bloomfield		C	lient Sample II	D: N	orth of MW#46			
<b>Project:</b>	San Juan River and RCRA	Wells	Collection Date: 8/2/2018 4:35:00 PM						
Lab ID:	1808248-003	Matrix: AQUEC	DUS	<b>Received Dat</b>	e: 8/4	4/2018 10:15:00 AM			
Analyses	5	Result	PQL	Qual Units	DF	<b>Date Analyzed</b>	Batch		
EPA 601	0B: TOTAL RECOVERABLI	E METALS				Analysi	t: pmf		
Arsenic		ND	0.020	mg/L	1	8/8/2018 11:42:35 AM	39612		
Barium		0.13	0.020	mg/L	1	8/7/2018 7:02:48 PM	39612		
Cadmiu	m	ND	0.0020	mg/L	1	8/7/2018 7:02:48 PM	39612		
Chromiu	Im	ND	0.0060	mg/L	1	8/7/2018 7:02:48 PM	39612		
Lead		ND	0.0050	mg/L	1	8/7/2018 7:02:48 PM	39612		
Seleniur	n	ND	0.050	mg/L	1	8/7/2018 7:02:48 PM	39612		
Silver		ND	0.0050	mg/L	1	8/7/2018 7:02:48 PM	39612		
EPA ME	THOD 8015D: GASOLINE R	ANGE				Analyst	t: AG		
Gasoline	e Range Organics (GRO)	ND	0.050	mg/L	1	8/7/2018 2:35:09 AM	A53243		
Surr:	BFB	103	70-130	%Rec	1	8/7/2018 2:35:09 AM	A53243		
EPA ME	THOD 8260: VOLATILES SH	HORT LIST				Analyst	t: AG		
Benzene	e	ND	1.0	µg/L	1	8/7/2018 2:35:09 AM	B53243		
Toluene		ND	1.0	μg/L	1	8/7/2018 2:35:09 AM	B53243		
Ethylber	nzene	ND	1.0	μg/L	1	8/7/2018 2:35:09 AM	B53243		
Methyl t	ert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/7/2018 2:35:09 AM	B53243		
Xylenes	, Total	ND	1.5	µg/L	1	8/7/2018 2:35:09 AM	B53243		
Surr:	4-Bromofluorobenzene	115	70-130	%Rec	1	8/7/2018 2:35:09 AM	B53243		

105

70-130

%Rec

1

Hall Environmental Analysis Laboratory, Inc.

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

**Qualifiers:** 

Surr: Toluene-d8

- \* Value exceeds Maximum Contaminant Level. D
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 6 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: Downstream Collection Date: 8/2/2018 5:10:00 PM

San Juan River and RCRA Wells **Project:** Lab ID: 1808248-004 Matrix: AQUEOUS

**CLIENT:** Andeavor Bloomfield

**Received Date:** 8/4/2018 10:15:00 AM

Analyses	Result	PQL	Qual U	nits	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst:	Irm
Diesel Range Organics (DRO)	ND	0.40	m	ng/L	1	8/9/2018 6:41:11 PM	39667
Motor Oil Range Organics (MRO)	ND	2.5	m	ng/L	1	8/9/2018 6:41:11 PM	39667
Surr: DNOP	78.4	76.6-135	%	6Rec	1	8/9/2018 6:41:11 PM	39667
EPA METHOD 300.0: ANIONS						Analyst:	MRA
Fluoride	0.14	0.10	m	ng/L	1	8/7/2018 6:38:29 PM	R53287
Chloride	2.5	0.50	m	ng/L	1	8/7/2018 6:38:29 PM	R53287
Bromide	ND	0.10	m	ng/L	1	8/7/2018 6:38:29 PM	R53287
Phosphorus, Orthophosphate (As P)	ND	0.50	m	ng/L	1	8/7/2018 6:38:29 PM	R53287
Sulfate	44	0.50	m	ng/L	1	8/7/2018 6:38:29 PM	R53287
Nitrate+Nitrite as N	ND	1.0	m	ng/L	5	8/8/2018 1:06:45 AM	R53285
SM2320B: ALKALINITY						Analyst:	sat
Bicarbonate (As CaCO3)	82.04	20.00	m	ng/L Ca	1	8/8/2018 2:27:57 PM	R53305
Carbonate (As CaCO3)	ND	2.000	m	ng/L Ca	1	8/8/2018 2:27:57 PM	R53305
Total Alkalinity (as CaCO3)	82.04	20.00	m	ng/L Ca	1	8/8/2018 2:27:57 PM	R53305
EPA METHOD 7470: MERCURY						Analyst:	rde
Mercury	ND	0.00020	m	ng/L	1	8/6/2018 6:56:44 PM	39609
EPA METHOD 7470: MERCURY						Analyst:	rde
Mercury	ND	0.00020	m	ng/L	1	8/17/2018 11:46:34 AM	39834
EPA METHOD 6010B: DISSOLVED METALS						Analyst:	pmf
Arsenic	ND	0.020	m	ng/L	1	8/13/2018 5:08:20 PM	B53393
Barium	0.065	0.020	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Cadmium	ND	0.0020	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Calcium	31	1.0	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Chromium	ND	0.0060	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Copper	ND	0.0060	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Iron	0.023	0.020	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Lead	ND	0.0050	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Magnesium	5.2	1.0	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Manganese	0.0041	0.0020	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Potassium	1.6	1.0	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Selenium	ND	0.050	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Silver	ND	0.0050	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Sodium	15	1.0	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
Uranium	ND	0.10	m	ng/L	1	8/13/2018 6:33:22 PM	A53387
Zinc	0.040	0.020	m	ng/L	1	8/13/2018 2:05:51 PM	A53393
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	pmf

#### EPA 6010B: TOTAL RECOVERABLE METALS

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 52
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

8/7/2018 11:34:23 AM B53276

CLIENT: Andeavor Bloomfield		Cl	ient Sample II	D:D	ownstream			
<b>Project:</b> San Juan River and RCRA Wells	Collection Date: 8/2/2018 5:10:00 PM							
Lab ID: 1808248-004	Matrix: AQUE	OUS	<b>Received Dat</b>	<b>e:</b> 8/4	4/2018 10:15:00 AM			
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch		
EPA 6010B: TOTAL RECOVERABLE MET	ALS				Analys	t: pmf		
Arsenic	ND	0.020	mg/L	1	8/8/2018 11:44:10 AM	39612		
Barium	0.11	0.020	mg/L	1	8/7/2018 7:04:17 PM	39612		
Cadmium	ND	0.0020	mg/L	1	8/7/2018 7:04:17 PM	39612		
Chromium	ND	0.0060	mg/L	1	8/7/2018 7:04:17 PM	39612		
Lead	0.0059	0.0050	mg/L	1	8/7/2018 7:04:17 PM	39612		
Selenium	ND	0.050	mg/L	1	8/7/2018 7:04:17 PM	39612		
Silver	ND	0.0050	mg/L	1	8/7/2018 7:04:17 PM	39612		
EPA METHOD 8015D: GASOLINE RANGE	i i i i i i i i i i i i i i i i i i i				Analys	t: AG		
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/7/2018 11:34:23 AM	A53276		
Surr: BFB	103	70-130	%Rec	1	8/7/2018 11:34:23 AM	A53276		
EPA METHOD 8260: VOLATILES SHORT	LIST				Analys	t: AG		
Benzene	ND	1.0	µg/L	1	8/7/2018 11:34:23 AM	B53276		
Toluene	ND	1.0	µg/L	1	8/7/2018 11:34:23 AM	B53276		
Ethylbenzene	ND	1.0	μg/L	1	8/7/2018 11:34:23 AM	B53276		
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	8/7/2018 11:34:23 AM	B53276		
Xylenes, Total	ND	1.5	µg/L	1	8/7/2018 11:34:23 AM	B53276		
Surr: 4-Bromofluorobenzene	116	70-130	%Rec	1	8/7/2018 11:34:23 AM	B53276		

98.7

70-130

%Rec

1

## Hall Environmental Analysis Laboratory, Inc.

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

**Qualifiers:** 

Surr: Toluene-d8

- \* Value exceeds Maximum Contaminant Level. D
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 8 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Hall Environ	mental Analys	sis Laboratory, Inc.
--------------	---------------	----------------------

Date Reported: 8/22/2018

CLIENT: Andeavor Bloomfield	Client Sample ID: Trip Blank								
Project: San Juan River and RCRA Wells			(	Collect	ion Dat	e:			
Lab ID: 1808248-005	Matrix:	AQUEOU	U <b>S</b>	Receiv	ved Dat	<b>e:</b> 8/4	/2018 10:	15:00 AM	
Analyses	R	esult	PQL	Qual	Units	DF	Date An	alyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE								Analyst	AG
Gasoline Range Organics (GRO)		ND	0.050		mg/L	1	8/7/2018	12:43:49 PM	A53276
Surr: BFB		106	70-130		%Rec	1	8/7/2018	12:43:49 PM	A53276
EPA METHOD 8260: VOLATILES SHORT L	.IST							Analyst	AG
Benzene		ND	1.0		µg/L	1	8/7/2018	12:43:49 PM	B53276
Toluene		ND	1.0		µg/L	1	8/7/2018	12:43:49 PM	B53276
Ethylbenzene		ND	1.0		µg/L	1	8/7/2018	12:43:49 PM	B53276
Methyl tert-butyl ether (MTBE)		ND	1.0		µg/L	1	8/7/2018	12:43:49 PM	B53276
Xylenes, Total		ND	1.5		µg/L	1	8/7/2018	12:43:49 PM	B53276
Surr: 4-Bromofluorobenzene		118	70-130		%Rec	1	8/7/2018	12:43:49 PM	B53276
Surr: Toluene-d8		106	70-130		%Rec	1	8/7/2018	12:43:49 PM	B53276

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

- \* 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
- PQL Practical Quanitative Limit
- 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 Page 9 of 52
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Client Sample ID: MW-68

Date Reported: 8/22/2018

<b>Project:</b> San Juan River and RCRA Wells		(	Collect	ion Date	: 8/3	3/2018 8:30:00 AM	
Lab ID: 1808248-006	Matrix: AQUE	OUS	Receiv	ved Date	: 8/2	4/2018 10:15:00 AM	
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst	: Irm
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	8/9/2018 7:25:36 PM	39667
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/9/2018 7:25:36 PM	39667
Surr: DNOP	85.9	76.6-135		%Rec	1	8/9/2018 7:25:36 PM	39667
CARBON DIOXIDE						Analyst	: sat
Total Carbon Dioxide	250	1.0	н	mg CO2	/ 1	8/8/2018 2:35:25 PM	R53305
EPA METHOD 300.0: ANIONS						Analyst	MRA
Fluoride	0.27	0.10		mg/L	1	8/7/2018 7:03:18 PM	R53287
Chloride	60	10		mg/L	20	8/7/2018 7:15:43 PM	R53287
Bromide	0.23	0.10		mg/L	1	8/7/2018 7:03:18 PM	R53287
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2018 7:03:18 PM	R53287
Sulfate	200	10		mg/L	20	8/7/2018 7:15:43 PM	R53287
Nitrate+Nitrite as N	4.5	1.0		mg/L	5	8/8/2018 1:19:10 AM	R53285
SM2320B: ALKALINITY						Analyst	: sat
Bicarbonate (As CaCO3)	264.4	20.00		mg/L Ca	1	8/8/2018 2:35:25 PM	R53305
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/8/2018 2:35:25 PM	R53305
Total Alkalinity (as CaCO3)	264.4	20.00		mg/L Ca	1	8/8/2018 2:35:25 PM	R53305
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	8/6/2018 6:58:55 PM	39609
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	8/17/2018 11:48:45 AM	39834
EPA METHOD 6010B: DISSOLVED METAL	S					Analyst	: pmf
Arsenic	ND	0.020		mg/L	1	8/13/2018 5:09:46 PM	B53393
Barium	0.027	0.020		mg/L	1	8/13/2018 2:07:40 PM	A53393
Cadmium	ND	0.0020		mg/L	1	8/13/2018 2:07:40 PM	A53393
Calcium	130	5.0		mg/L	5	8/13/2018 2:25:53 PM	A53393
Chromium	ND	0.0060		mg/L	1	8/13/2018 2:07:40 PM	A53393
Copper	ND	0.0060		mg/L	1	8/13/2018 2:07:40 PM	A53393
Iron	ND	0.020		mg/L	1	8/13/2018 2:07:40 PM	A53393
Lead	ND	0.0050		mg/L	1	8/13/2018 2:07:40 PM	A53393
Magnesium	27	1.0		mg/L	1	8/13/2018 2:07:40 PM	A53393
Manganese	0.0041	0.0020		mg/L	1	8/13/2018 2:07:40 PM	A53393
Potassium	2.8	1.0		mg/L	1	8/13/2018 2:07:40 PM	A53393
Selenium	ND	0.050		mg/L	1	8/13/2018 2:07:40 PM	A53393
Silver	ND	0.0050		mg/L	1	8/13/2018 2:07:40 PM	A53393
Sodium	120	5.0		mg/L	5	8/13/2018 2:25:53 PM	A53393
Uranium	ND	0.10		mg/L	1	8/13/2018 6:34:30 PM	A53387

Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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

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
  - PQL Practical Quanitative Limit
  - 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 limit. Page 10 of 52
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/22/2018

CLIENT: Andeavor Bloomfield	Client Sample ID: MW-68								
Project:San Juan River and RCRA WellsLab ID:1808248-006MathematicalMathematical	latrix: AQUEC	OUS	Collection Dat Received Dat	e: 8/: e: 8/-	3/2018 8:30:00 AM 4/2018 10:15:00 AM				
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch			
EPA METHOD 6010B: DISSOLVED METALS					Analyst	: pmf			
Zinc	ND	0.020	mg/L	1	8/13/2018 2:07:40 PM	A53393			
EPA 6010B: TOTAL RECOVERABLE METAL	S				Analyst	: pmf			
Arsenic	ND	0.020	mg/L	1	8/8/2018 11:45:44 AM	39612			
Barium	0.038	0.020	mg/L	1	8/7/2018 7:05:44 PM	39612			
Cadmium	ND	0.0020	mg/L	1	8/7/2018 7:05:44 PM	39612			
Chromium	ND	0.0060	mg/L	1	8/7/2018 7:05:44 PM	39612			
Lead	ND	0.0050	mg/L	1	8/7/2018 7:05:44 PM	39612			
Selenium	ND	0.050	mg/L	1	8/7/2018 7:05:44 PM	39612			
Silver	ND	0.0050	mg/L	1	8/7/2018 7:05:44 PM	39612			
EPA METHOD 8015D: GASOLINE RANGE					Analyst	AG			
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/7/2018 1:07:04 PM	A53276			
Surr: BFB	106	70-130	%Rec	1	8/7/2018 1:07:04 PM	A53276			
EPA METHOD 8260: VOLATILES SHORT LIS	т				Analyst	AG			
Benzene	ND	1.0	µg/L	1	8/7/2018 1:07:04 PM	B53276			
Toluene	ND	1.0	μg/L	1	8/7/2018 1:07:04 PM	B53276			
Ethylbenzene	ND	1.0	µg/L	1	8/7/2018 1:07:04 PM	B53276			
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	8/7/2018 1:07:04 PM	B53276			
Xylenes, Total	ND	1.5	µg/L	1	8/7/2018 1:07:04 PM	B53276			
Surr: 4-Bromofluorobenzene	119	70-130	%Rec	1	8/7/2018 1:07:04 PM	B53276			
Surr: Toluene-d8	104	70-130	%Rec	1	8/7/2018 1:07:04 PM	B53276			

Hall Environmental Analysis Laboratory, Inc.

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 11 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Client Sample ID: MW-51

Date Reported: 8/22/2018

<b>Project:</b> San Juan River and RCRA Wells		(	Collect	ion Date	: 8/3	3/2018 9:40:00 AM	
Lab ID: 1808248-007	Matrix: AQUE	OUS	Recei	ved Date	: 8/2	4/2018 10:15:00 AM	
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst	:: Irm
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	8/9/2018 7:47:49 PM	39667
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/9/2018 7:47:49 PM	39667
Surr: DNOP	87.0	76.6-135		%Rec	1	8/9/2018 7:47:49 PM	39667
CARBON DIOXIDE						Analyst	: sat
Total Carbon Dioxide	230	1.0	н	mg CO2/	1	8/8/2018 2:48:38 PM	R53305
EPA METHOD 300.0: ANIONS						Analyst	: MRA
Fluoride	0.40	0.10		mg/L	1	8/7/2018 7:52:56 PM	R53287
Chloride	8.3	0.50		mg/L	1	8/7/2018 7:52:56 PM	R53287
Bromide	ND	0.10		mg/L	1	8/7/2018 7:52:56 PM	R53287
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2018 7:52:56 PM	R53287
Sulfate	12	0.50		mg/L	1	8/7/2018 7:52:56 PM	R53287
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/8/2018 1:31:34 AM	R53285
SM2320B: ALKALINITY						Analyst	: sat
Bicarbonate (As CaCO3)	254.1	20.00		mg/L Ca	1	8/8/2018 2:48:38 PM	R53305
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/8/2018 2:48:38 PM	R53305
Total Alkalinity (as CaCO3)	254.1	20.00		mg/L Ca	1	8/8/2018 2:48:38 PM	R53305
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	8/6/2018 7:01:06 PM	39609
EPA METHOD 7470: MERCURY						Analyst	:: rde
Mercury	ND	0.00020		mg/L	1	8/17/2018 11:50:57 AM	39834
EPA METHOD 6010B: DISSOLVED METAL	S					Analyst	∷ pmf
Arsenic	0.020	0.020		mg/L	1	8/13/2018 5:11:12 PM	B53393
Barium	0.12	0.020		mg/L	1	8/13/2018 2:14:55 PM	A53393
Cadmium	ND	0.0020		mg/L	1	8/13/2018 2:14:55 PM	A53393
Calcium	60	1.0		mg/L	1	8/13/2018 2:14:55 PM	A53393
Chromium	ND	0.0060		mg/L	1	8/13/2018 2:14:55 PM	A53393
Copper	ND	0.0060		mg/L	1	8/13/2018 2:14:55 PM	A53393
Iron	0.075	0.020		mg/L	1	8/13/2018 2:14:55 PM	A53393
Lead	0.0086	0.0050		mg/L	1	8/13/2018 2:14:55 PM	A53393
Magnesium	12	1.0		mg/L	1	8/13/2018 2:14:55 PM	A53393
Manganese	2.5	0.010		mg/L	5	8/13/2018 2:27:43 PM	A53393
Potassium	1.5	1.0		mg/L	1	8/13/2018 2:14:55 PM	A53393
Selenium	ND	0.050		mg/L	1	8/13/2018 2:14:55 PM	A53393
Silver	ND	0.0050		mg/L	1	8/13/2018 2:14:55 PM	A53393
Sodium	37	1.0		mg/L	1	8/13/2018 2:14:55 PM	A53393
Uranium	ND	0.10		mg/L	1	8/13/2018 6:38:35 PM	A53387

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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

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
  - PQL Practical Quanitative Limit
  - 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 limit. Page 12 of 52
- P Sample pH Not In Range
- RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Date Reported: 8/22/2018

# Hall Environmental Analysis Laboratory, Inc.

Matrix: AQUEOUS

Client Sample ID: MW-51 Collection Date: 8/3/2018 9:40:00 AM

Lab ID: 1808248-007

**Project:** 

**CLIENT:** Andeavor Bloomfield

San Juan River and RCRA Wells

Received Date: 8/4/2018 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: DISSOLVED METALS						Analyst	: pmf
Zinc	ND	0.020		mg/L	1	8/13/2018 2:14:55 PM	A53393
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst	: pmf
Arsenic	ND	0.020		mg/L	1	8/8/2018 11:47:19 AM	39612
Barium	0.17	0.020		mg/L	1	8/7/2018 7:07:11 PM	39612
Cadmium	ND	0.0020		mg/L	1	8/7/2018 7:07:11 PM	39612
Chromium	ND	0.0060		mg/L	1	8/7/2018 7:07:11 PM	39612
Lead	ND	0.0050		mg/L	1	8/7/2018 7:07:11 PM	39612
Selenium	ND	0.050		mg/L	1	8/7/2018 7:07:11 PM	39612
Silver	ND	0.0050		mg/L	1	8/7/2018 7:07:11 PM	39612
EPA METHOD 8015D: GASOLINE RANGE						Analyst	: AG
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/7/2018 2:16:50 PM	A53276
Surr: BFB	99.4	70-130		%Rec	1	8/7/2018 2:16:50 PM	A53276
EPA METHOD 8270C: SEMIVOLATILES						Analyst	: JDC
Acenaphthene	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Acenaphthylene	ND	10		μg/L	1	8/13/2018 9:51:57 PM	39686
Aniline	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Anthracene	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Azobenzene	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Benz(a)anthracene	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Benzo(a)pyrene	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Benzo(b)fluoranthene	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Benzo(k)fluoranthene	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Benzoic acid	ND	20		µg/L	1	8/13/2018 9:51:57 PM	39686
Benzyl alcohol	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Butyl benzyl phthalate	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Carbazole	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
4-Chloroaniline	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
2-Chloronaphthalene	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
2-Chlorophenol	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686
Chrysene	ND	10		µg/L	1	8/13/2018 9:51:57 PM	39686

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

**Oualifiers:** \* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- Analyte detected in the associated Method Blank В
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 13 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Analytical Report	
Lab Order <b>1808248</b>	

|--|

<b>CLIENT:</b> Andeavor Bloomfield		Client	Sample I	<b>D:</b> M	W-51			
Project: San Juan River and RCRA Well	Collection Date: 8/3/2018 9:40:00 AM							
Lab ID: 1808248-007	Matrix: AQUEOU	JS Rec	eived Dat	t <b>e:</b> 8/4	4/2018 10:15:00 AM			
Analyses	Result	PQL Qua	al Units	DF	Date Analyzed	Batch		
EPA METHOD 8270C: SEMIVOLATILES					Analysi	: JDC		
Di-n-butyl phthalate	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Di-n-octyl phthalate	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Dibenz(a,h)anthracene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Dibenzofuran	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
1,2-Dichlorobenzene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
1,3-Dichlorobenzene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
1,4-Dichlorobenzene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
3,3'-Dichlorobenzidine	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Diethyl phthalate	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Dimethyl phthalate	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
2,4-Dichlorophenol	ND	20	µg/L	1	8/13/2018 9:51:57 PM	39686		
2,4-Dimethylphenol	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
4,6-Dinitro-2-methylphenol	ND	20	µg/L	1	8/13/2018 9:51:57 PM	39686		
2,4-Dinitrophenol	ND	20	µg/L	1	8/13/2018 9:51:57 PM	39686		
2,4-Dinitrotoluene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
2,6-Dinitrotoluene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Fluoranthene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Fluorene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Hexachlorobenzene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Hexachlorobutadiene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Hexachlorocyclopentadiene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Hexachloroethane	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Indeno(1,2,3-cd)pyrene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Isophorone	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
1-Methylnaphthalene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
2-Methylnaphthalene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
2-Methylphenol	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
3+4-Methylphenol	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
N-Nitrosodi-n-propylamine	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
N-Nitrosodimethylamine	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
N-Nitrosodiphenylamine	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Naphthalene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
2-Nitroaniline	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
3-Nitroaniline	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
4-Nitroaniline	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Nitrobenzene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
2-Nitrophenol	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
4-Nitrophenol	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686		
Pentachlorophenol	ND	20	µg/L	1	8/13/2018 9:51:57 PM	39686		

Hall Environmental Analysis Laboratory, Inc.

*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth
-		-	

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

D Sample Diluted Due to Matrix

**Qualifiers:** 

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- od Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 14 of 52 J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

Analytical Report	
Lab Order <b>1808248</b>	

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 8/22/2018

CLIENT: Andeavor Bloomfield Project: San Juan River and RCRA Wells

1808248-007

Lab ID:

Client Sample ID: MW-51 Collection Date: 8/3/2018 9:40:00 AM

Matrix: AQUEOUS

**Received Date:** 8/4/2018 10:15:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES					Analyst	: JDC
Phenanthrene	ND	10	μg/L	1	8/13/2018 9:51:57 PM	39686
Phenol	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686
Pyrene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686
Pyridine	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686
1,2,4-Trichlorobenzene	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686
2,4,5-Trichlorophenol	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686
2,4,6-Trichlorophenol	ND	10	µg/L	1	8/13/2018 9:51:57 PM	39686
Surr: 2-Fluorophenol	45.2	15-74.1	%Rec	1	8/13/2018 9:51:57 PM	39686
Surr: Phenol-d5	35.1	15-59.8	%Rec	1	8/13/2018 9:51:57 PM	39686
Surr: 2,4,6-Tribromophenol	68.5	22.1-112	%Rec	1	8/13/2018 9:51:57 PM	39686
Surr: Nitrobenzene-d5	62.0	33.2-94	%Rec	1	8/13/2018 9:51:57 PM	39686
Surr: 2-Fluorobiphenyl	60.9	34-90.9	%Rec	1	8/13/2018 9:51:57 PM	39686
Surr: 4-Terphenyl-d14	86.6	15-149	%Rec	1	8/13/2018 9:51:57 PM	39686
EPA METHOD 8260: VOLATILES SHORT LIST					Analyst	AG
Benzene	ND	1.0	µg/L	1	8/7/2018 2:16:50 PM	B53276
Toluene	ND	1.0	µg/L	1	8/7/2018 2:16:50 PM	B53276
Ethylbenzene	ND	1.0	µg/L	1	8/7/2018 2:16:50 PM	B53276
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/7/2018 2:16:50 PM	B53276
Xylenes, Total	ND	1.5	µg/L	1	8/7/2018 2:16:50 PM	B53276
Surr: 4-Bromofluorobenzene	113	70-130	%Rec	1	8/7/2018 2:16:50 PM	B53276
Surr: Toluene-d8	100	70-130	%Rec	1	8/7/2018 2:16:50 PM	B53276

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

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- U U-14 and a construction of the construction
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 15 of 52
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/22/2018

<b>Project:</b> San Juan River and RCRA Wells	Collection Date: 8/3/2018 11:15:00 AM						
Lab ID: 1808248-008	Matrix: AQUE	OUS	Receiv	ved Date	: 8/4	/2018 10:15:00 AM	
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst	: Irm
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	8/9/2018 8:10:01 PM	39667
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/9/2018 8:10:01 PM	39667
Surr: DNOP	81.9	76.6-135		%Rec	1	8/9/2018 8:10:01 PM	39667
CARBON DIOXIDE						Analyst	: sat
Total Carbon Dioxide	330	1.0	н	mg CO2	/ 1	8/8/2018 3:00:40 PM	R53305
EPA METHOD 300.0: ANIONS						Analyst	MRA
Fluoride	0.62	0.10		mg/L	1	8/7/2018 8:17:45 PM	R53287
Chloride	16	0.50		mg/L	1	8/7/2018 8:17:45 PM	R53287
Bromide	0.16	0.10		mg/L	1	8/7/2018 8:17:45 PM	R53287
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2018 8:17:45 PM	R53287
Sulfate	240	10		mg/L	20	8/7/2018 8:30:09 PM	R53287
Nitrate+Nitrite as N	8.6	1.0		mg/L	5	8/8/2018 1:43:59 AM	R53285
SM2320B: ALKALINITY						Analyst	: sat
Bicarbonate (As CaCO3)	351.6	20.00		mg/L Ca	1	8/8/2018 3:00:40 PM	R53305
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/8/2018 3:00:40 PM	R53305
Total Alkalinity (as CaCO3)	351.6	20.00		mg/L Ca	1	8/8/2018 3:00:40 PM	R53305
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	8/6/2018 7:03:18 PM	39609
EPA METHOD 7470: MERCURY						Analyst	: rde
Mercury	ND	0.00020		mg/L	1	8/17/2018 11:53:09 AM	39834
EPA METHOD 6010B: DISSOLVED METAL	S					Analyst	: pmf
Arsenic	ND	0.020		mg/L	1	8/13/2018 5:12:38 PM	B53393
Barium	0.026	0.020		mg/L	1	8/13/2018 2:16:46 PM	A53393
Cadmium	ND	0.0020		mg/L	1	8/13/2018 2:16:46 PM	A53393
Calcium	130	5.0		mg/L	5	8/13/2018 2:29:33 PM	A53393
Chromium	ND	0.0060		mg/L	1	8/13/2018 2:16:46 PM	A53393
Copper	ND	0.0060		mg/L	1	8/13/2018 2:16:46 PM	A53393
Iron	ND	0.020		mg/L	1	8/13/2018 2:16:46 PM	A53393
Lead	ND	0.0050		mg/L	1	8/13/2018 2:16:46 PM	A53393
Magnesium	27	1.0		mg/L	1	8/13/2018 2:16:46 PM	A53393
Manganese	0.16	0.0020		mg/L	1	8/13/2018 2:16:46 PM	A53393
Potassium	2.8	1.0		mg/L	1	8/13/2018 2:16:46 PM	A53393
Selenium	ND	0.050		mg/L	1	8/13/2018 2:16:46 PM	A53393
Silver	ND	0.0050		mg/L	1	8/13/2018 2:16:46 PM	A53393
Sodium	80	1.0		mg/L	1	8/13/2018 2:16:46 PM	A53393
Uranium	ND	0.10		mg/L	1	8/13/2018 6:39:46 PM	A53387

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

Client Sample ID: MW-67

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

Qualifiers: *	Value exceeds Maximum	Contaminant Level.
---------------	-----------------------	--------------------

- D Sample Diluted Due to Matrix
  - Н Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quanitative Limit
  - % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 16 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/22/2018

8/7/2018 2:40:09 PM

8/7/2018 2:40:09 PM

8/7/2018 2:40:09 PM

8/7/2018 2:40:09 PM

B53276

B53276

B53276

B53276

CLIENT: Andeavor Bloomfield	Client Sample ID: MW-67								
<b>Project:</b> San Juan River and RCRA Wells		Collection Date: 8/3/2018 11:15:00 AM							
Lab ID: 1808248-008	Matrix: AQUE	OUS	Received Date	e: 8/4	4/2018 10:15:00 AM				
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch			
EPA METHOD 6010B: DISSOLVED METAI	_S				Analyst	: pmf			
Zinc	ND	0.020	mg/L	1	8/13/2018 2:16:46 PM	A53393			
EPA 6010B: TOTAL RECOVERABLE MET	ALS				Analyst	: pmf			
Arsenic	ND	0.020	mg/L	1	8/8/2018 11:49:13 AM	39612			
Barium	0.081	0.020	mg/L	1	8/7/2018 7:08:38 PM	39612			
Cadmium	ND	0.0020	mg/L	1	8/7/2018 7:08:38 PM	39612			
Chromium	ND	0.0060	mg/L	1	8/7/2018 7:08:38 PM	39612			
Lead	ND	0.0050	mg/L	1	8/7/2018 7:08:38 PM	39612			
Selenium	ND	0.050	mg/L	1	8/7/2018 7:08:38 PM	39612			
Silver	ND	0.0050	mg/L	1	8/7/2018 7:08:38 PM	39612			
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: AG			
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/7/2018 2:40:09 PM	A53276			
Surr: BFB	103	70-130	%Rec	1	8/7/2018 2:40:09 PM	A53276			
EPA METHOD 8260: VOLATILES SHORT	LIST				Analyst	: AG			
Benzene	ND	1.0	μg/L	1	8/7/2018 2:40:09 PM	B53276			
Toluene	ND	1.0	μg/L	1	8/7/2018 2:40:09 PM	B53276			
Ethylbenzene	ND	1.0	µg/L	1	8/7/2018 2:40:09 PM	B53276			

ND

ND

114

108

1.0

1.5

70-130

70-130

µg/L

µg/L

%Rec

%Rec

1

1

1

1

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

Qualifiers: \* Value exceeds Maximum Contaminant Level.

Methyl tert-butyl ether (MTBE)

Surr: 4-Bromofluorobenzene

Xylenes, Total

Surr: Toluene-d8

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 17 of 52
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 8/22/2018

<b>Project:</b> San Juan River and RCRA Wells	Collection Date:     8/3/2018     12:30:00 PM						
Lab ID: 1808248-009	Matrix: AQUE	OUS	Receiv	ved Date	: 8/4	/2018 10:15:00 AM	
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst	: Irm
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	8/9/2018 8:32:17 PM	39667
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/9/2018 8:32:17 PM	39667
Surr: DNOP	84.4	76.6-135		%Rec	1	8/9/2018 8:32:17 PM	39667
CARBON DIOXIDE						Analyst	sat
Total Carbon Dioxide	330	1.0	н	mg CO2/	′1	8/8/2018 3:15:40 PM	R53305
EPA METHOD 300.0: ANIONS						Analyst	MRA
Fluoride	ND	2.0		mg/L	20	8/7/2018 8:54:57 PM	R53287
Chloride	890	50		mg/L	100	8/17/2018 1:05:26 PM	R53556
Bromide	2.2	0.10		mg/L	1	8/7/2018 8:42:33 PM	R53287
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2018 8:42:33 PM	R53287
Sulfate	900	50		mg/L	100	8/17/2018 1:05:26 PM	R53556
Nitrate+Nitrite as N	15	1.0	*	mg/L	5	8/8/2018 1:56:24 AM	R53285
SM2320B: ALKALINITY						Analyst	sat
Bicarbonate (As CaCO3)	350.6	20.00		mg/L Ca	1	8/8/2018 3:15:40 PM	R53305
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/8/2018 3:15:40 PM	R53305
Total Alkalinity (as CaCO3)	350.6	20.00		mg/L Ca	1	8/8/2018 3:15:40 PM	R53305
EPA METHOD 7470: MERCURY						Analyst	rde
Mercury	ND	0.00020		mg/L	1	8/6/2018 7:05:31 PM	39609
EPA METHOD 7470: MERCURY						Analyst	rde
Mercury	ND	0.00020		mg/L	1	8/17/2018 11:55:22 AM	39834
EPA METHOD 6010B: DISSOLVED METAL	S					Analyst	pmf
Arsenic	ND	0.020		mg/L	1	8/13/2018 5:14:04 PM	B53393
Barium	ND	0.020		mg/L	1	8/13/2018 2:18:36 PM	A53393
Cadmium	ND	0.0020		mg/L	1	8/13/2018 2:18:36 PM	A53393
Calcium	380	5.0		mg/L	5	8/13/2018 2:31:23 PM	A53393
Chromium	ND	0.0060		mg/L	1	8/13/2018 2:18:36 PM	A53393
Copper	ND	0.0060		mg/L	1	8/13/2018 2:18:36 PM	A53393
Iron	ND	0.020		mg/L	1	8/13/2018 2:18:36 PM	A53393
Lead	ND	0.0050		mg/L	1	8/13/2018 2:18:36 PM	A53393
Magnesium	52	1.0		mg/L	1	8/13/2018 2:18:36 PM	A53393
Manganese	0.48	0.0020		mg/L	1	8/13/2018 2:18:36 PM	A53393
Potassium	4.1	1.0		mg/L	1	8/13/2018 2:18:36 PM	A53393
Selenium	ND	0.050		mg/L	1	8/13/2018 2:18:36 PM	A53393
Silver	0.011	0.0050		mg/L	1	8/13/2018 2:18:36 PM	A53393
Sodium	770	10		mg/L	10	8/13/2018 2:38:51 PM	A53393
Uranium	ND	0.10		mg/L	1	8/13/2018 6:40:57 PM	A53387

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

Client Sample ID: MW-53

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

\* **Qualifiers:** Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
  - Н Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quanitative Limit
  - % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 18 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/22/2018

CLIENT: Andeavor Bloomfield	Client Sample ID: MW-53							
<b>Project:</b> San Juan River and RCRA Wells	Collection Date: 8/3/2018 12:30:00 PM							
Lab ID: 1808248-009	fatrix: AQUEC	OUS	<b>Received Date</b>	e: 8/4	4/2018 10:15:00 AM			
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch		
EPA METHOD 6010B: DISSOLVED METALS					Analyst	: pmf		
Zinc	ND	0.020	mg/L	1	8/13/2018 2:18:36 PM	A53393		
EPA 6010B: TOTAL RECOVERABLE METAL	.s				Analyst	: pmf		
Arsenic	ND	0.020	mg/L	1	8/8/2018 11:50:49 AM	39612		
Barium	ND	0.020	mg/L	1	8/7/2018 7:10:05 PM	39612		
Cadmium	ND	0.0020	mg/L	1	8/7/2018 7:10:05 PM	39612		
Chromium	ND	0.0060	mg/L	1	8/7/2018 7:10:05 PM	39612		
Lead	ND	0.0050	mg/L	1	8/7/2018 7:10:05 PM	39612		
Selenium	ND	0.050	mg/L	1	8/7/2018 7:10:05 PM	39612		
Silver	0.010	0.0050	mg/L	1	8/7/2018 7:10:05 PM	39612		
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: AG		
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/7/2018 3:03:17 PM	A53276		
Surr: BFB	101	70-130	%Rec	1	8/7/2018 3:03:17 PM	A53276		
EPA METHOD 8260: VOLATILES SHORT LIS	ST				Analyst	: AG		
Benzene	ND	1.0	µg/L	1	8/7/2018 3:03:17 PM	B53276		
Toluene	ND	1.0	µg/L	1	8/7/2018 3:03:17 PM	B53276		
Ethylbenzene	ND	1.0	μg/L	1	8/7/2018 3:03:17 PM	B53276		
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	8/7/2018 3:03:17 PM	B53276		
Xylenes, Total	ND	1.5	μg/L	1	8/7/2018 3:03:17 PM	B53276		
Surr: 4-Bromofluorobenzene	114	70-130	%Rec	1	8/7/2018 3:03:17 PM	B53276		
Surr: Toluene-d8	100	70-130	%Rec	1	8/7/2018 3:03:17 PM	B53276		

Hall Environmental Analysis Laboratory, Inc.

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 19 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental A	Analysis L	aboratory, Inc.
----------------------	------------	-----------------

Date Reported: 8/22/2018

CLIENT: Andeavor BloomfieldProject:San Juan River and RCRA WellLab ID:1808248-010	Client Sample ID: Trip Blank     collection Date:     Matrix: AQUEOUS   Received Date: 8/4/2018 10:15:00 AM					
Analyses	Result	PQL	Qual Units	DF	<b>Date Analyzed</b>	Batch
EPA METHOD 8015D: GASOLINE RANG	E				Analyst	AG
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/7/2018 3:26:34 PM	A53276
Surr: BFB	101	70-130	%Rec	1	8/7/2018 3:26:34 PM	A53276
EPA METHOD 8260: VOLATILES SHORT	T LIST				Analyst	: AG
Benzene	ND	1.0	µg/L	1	8/7/2018 3:26:34 PM	B53276
Toluene	ND	1.0	µg/L	1	8/7/2018 3:26:34 PM	B53276
Ethylbenzene	ND	1.0	µg/L	1	8/7/2018 3:26:34 PM	B53276
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/7/2018 3:26:34 PM	B53276
Xylenes, Total	ND	1.5	µg/L	1	8/7/2018 3:26:34 PM	B53276
Surr: 4-Bromofluorobenzene	114	70-130	%Rec	1	8/7/2018 3:26:34 PM	B53276
Surr: Toluene-d8	101	70-130	%Rec	1	8/7/2018 3:26:34 PM	B53276

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

- \* Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 20 of 52 J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

Date Reported: 8/22/2018

<b>Project:</b> San Juan River and RCRA Wells	Collection Date: 8/3/2018 1:50:00 PM						
Lab ID: 1808248-011	Matrix: AQUE	EOUS	Recei	ved Date	: 8/4	4/2018 10:15:00 AM	
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst	Irm
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	8/9/2018 8:54:25 PM	39667
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/9/2018 8:54:25 PM	39667
Surr: DNOP	80.4	76.6-135		%Rec	1	8/9/2018 8:54:25 PM	39667
CARBON DIOXIDE						Analyst	sat
Total Carbon Dioxide	1000	1.0	н	mg CO2	/ 1	8/8/2018 3:31:07 PM	R53305
EPA METHOD 300.0: ANIONS						Analyst	MRA
Fluoride	ND	0.10		mg/L	1	8/7/2018 9:07:22 PM	R53287
Chloride	190	10		mg/L	20	8/7/2018 9:19:47 PM	R53287
Bromide	3.1	0.10		mg/L	1	8/7/2018 9:07:22 PM	R53287
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2018 9:07:22 PM	R53287
Sulfate	180	10		mg/L	20	8/7/2018 9:19:47 PM	R53287
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/8/2018 2:08:49 AM	R53285
SM2320B: ALKALINITY						Analyst	sat
Bicarbonate (As CaCO3)	1050	20.00		mg/L Ca	1	8/8/2018 3:31:07 PM	R53305
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/8/2018 3:31:07 PM	R53305
Total Alkalinity (as CaCO3)	1050	20.00		mg/L Ca	1	8/8/2018 3:31:07 PM	R53305
EPA METHOD 7470: MERCURY						Analyst	rde
Mercury	ND	0.00020		mg/L	1	8/6/2018 7:07:43 PM	39609
EPA METHOD 7470: MERCURY						Analyst	rde
Mercury	ND	0.00020		mg/L	1	8/17/2018 11:57:34 AM	39834
EPA METHOD 6010B: DISSOLVED METAL	S					Analyst	pmf
Arsenic	ND	0.020		mg/L	1	8/13/2018 5:15:31 PM	B53393
Barium	0.073	0.020		mg/L	1	8/13/2018 2:20:32 PM	A53393
Cadmium	ND	0.0020		mg/L	1	8/13/2018 2:20:32 PM	A53393
Calcium	170	5.0		mg/L	5	8/13/2018 2:40:41 PM	A53393
Chromium	ND	0.0060		mg/L	1	8/13/2018 2:20:32 PM	A53393
Copper	ND	0.0060		mg/L	1	8/13/2018 2:20:32 PM	A53393
Iron	7.5	0.20		mg/L	10	8/15/2018 11:54:24 AM	A53449
Lead	0.0090	0.0050		mg/L	1	8/13/2018 2:20:32 PM	A53393
Magnesium	50	1.0		mg/L	1	8/13/2018 2:20:32 PM	A53393
Manganese	1.5	0.010		mg/L	5	8/13/2018 2:40:41 PM	A53393
Potassium	3.0	1.0		mg/L	1	8/13/2018 2:20:32 PM	A53393
Selenium	0.11	0.050		mg/L	1	8/13/2018 2:20:32 PM	A53393
Silver	ND	0.0050		mg/L	1	8/13/2018 2:20:32 PM	A53393
Sodium	430	5.0		mg/L	5	8/13/2018 2:40:41 PM	A53393
Uranium	ND	0.10		mg/L	1	8/13/2018 6:42:06 PM	A53387

#### Hall Environmental Analysis Laboratory, Inc.

a . р. ъ.

**CLIENT:** Andeavor Bloomfield

Client Sample ID: MW-59 **a** 11 .. 9/2/2019 1.50.00 DM

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

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
  - PQL Practical Quanitative Limit
  - % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 21 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/22/2018

CLIENT: Andeavor BloomfieldProject:San Juan River and RCRA WellsLab ID:1808248-011	Client Sample ID: MW-59 Collection Date: 8/3/2018 1:50:00 PM Matrix: AQUEOUS Received Date: 8/4/2018 10:15:00 AM						
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch	
EPA METHOD 6010B: DISSOLVED METALS	3				Analvst:	pmf	
	ND	0 020	ma/l	1	8/13/2018 2·20·32 PM	A53393	
	1 <b>e</b>	0.020	iiig/ L		Analyst:	nmf	
		0.000		4	Analysi.	pini 2004.0	
Arsenic	ND	0.020	mg/L	1	8/8/2018 11:58:15 AM	39612	
Barium	0.12	0.020	mg/L	1	8/7/2018 7:11:32 PM	39612	
Charmium	ND	0.0020	mg/L	1	8/7/2018 7:11:32 PM	39612	
Lood		0.0060	mg/L	1	0/7/2010 7.11.32 PM	39012	
Leau		0.0050	mg/L	1	0/0/2010 11.30.13 AW	39012	
Silver		0.050	mg/L	1	0/7/2010 7:11:32 PM	39012	
	ND	0.0050	iiig/∟	I	0/1/2010 1.11.32 FW	39012	
EPA METHOD 8015D: GASOLINE RANGE					Analyst:	AG	
Gasoline Range Organics (GRO)	2.3	0.050	mg/L	1	8/7/2018 3:49:51 PM	A53276	
Surr: BFB	107	70-130	%Rec	1	8/7/2018 3:49:51 PM	A53276	
EPA METHOD 8270C: SEMIVOLATILES					Analyst:	JDC	
Acenaphthene	ND	10	μg/L	1	8/13/2018 10:21:42 PM	39686	
Acenaphthylene	ND	10	μg/L	1	8/13/2018 10:21:42 PM	39686	
Aniline	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Anthracene	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Azobenzene	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Benz(a)anthracene	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Benzo(a)pyrene	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Benzo(b)fluoranthene	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Benzo(g,h,i)perylene	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Benzo(k)fluoranthene	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Benzoic acid	ND	20	µg/L	1	8/13/2018 10:21:42 PM	39686	
Benzyl alcohol	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Bis(2-chloroethoxy)methane	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Bis(2-chloroethyl)ether	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Bis(2-chloroisopropyl)ether	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Bis(2-ethylhexyl)phthalate	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
4-Bromophenyl phenyl ether	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Butyl benzyl phthalate	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
Carbazole	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
4-Chloro-3-methylphenol	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
4-Chloroaniline	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
2-Chloronaphthalene	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	
2-Uniorophenol	ND	10	µg/∟	1	8/13/2018 10:21:42 PM	39686	
4-Chlorophenyl phenyl ether	ND	10	µg/L	1	8/13/2018 10:21:42 PM	39686	

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

10

ND

Qualifiers: \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Chrysene

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

1

- E Value above quantitation range
- J Analyte detected below quantitation limits Page 22 of 52

8/13/2018 10:21:42 PM 39686

- P Sample pH Not In Range
- RL Reporting Detection Limit

µg/L

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report	
Lab Order <b>1808248</b>	

Date	Reported:	8/22	/2018
Duit	Reporteu.	0/44	

<b>CLIENT:</b>	Andeavor Bloomfield		C	lient Sa	ample I	<b>D:</b> M	W-59			
Project:	San Juan River and RCRA Wells	Collection Date: 8/3/2018 1:50:00 PM								
Lab ID:	1808248-011	Matrix: AQUEOU	S	Recei	ved Dat	e: 8/4	4/2018 10:15:00 AM			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch		
EPA MET	HOD 8270C: SEMIVOLATILES						Analyst	JDC		
Di-n-buty	/l phthalate	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Di-n-octy	'l phthalate	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Dibenz(a	i,h)anthracene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Dibenzof	iuran	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
1,2-Dichl	orobenzene	ND	10		μg/L	1	8/13/2018 10:21:42 PM	39686		
1,3-Dichl	orobenzene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
1,4-Dichl	orobenzene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
3,3´-Dich	lorobenzidine	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Diethyl p	hthalate	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Dimethyl	phthalate	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
2,4-Dichl	orophenol	ND	20		µg/L	1	8/13/2018 10:21:42 PM	39686		
2,4-Dime	ethylphenol	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
4,6-Dinitr	ro-2-methylphenol	ND	20		µg/L	1	8/13/2018 10:21:42 PM	39686		
2,4-Dinitr	rophenol	ND	20		µg/L	1	8/13/2018 10:21:42 PM	39686		
2,4-Dinitr	rotoluene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
2,6-Dinitr	rotoluene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Fluoranth	nene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Fluorene		ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Hexachlo	probenzene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Hexachlo	probutadiene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Hexachlo	procyclopentadiene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Hexachlo	proethane	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Indeno(1	,2,3-cd)pyrene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Isophoro	ne	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
1-Methyli	naphthalene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
2-Methyli	naphthalene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
2-Methyl	phenol	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
3+4-Meth	nylphenol	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
N-Nitroso	odi-n-propylamine	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
N-Nitroso	odimethylamine	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
N-Nitroso	odiphenylamine	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Naphthal	lene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
2-Nitroar	niline	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
3-Nitroar	niline	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
4-Nitroar	hiline	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Nitrobenz	zene	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
2-Nitroph	nenol	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
4-Nitroph	nenol	ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686		
Pentachl	orophenol	ND	20		µg/L	1	8/13/2018 10:21:42 PM	39686		

## Hall Environmental Analysis Laboratory, Inc.

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

\* **Qualifiers:** Value exceeds Maximum Contaminant Level.

- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Value above quantitation range Е
- Analyte detected below quantitation limits Page 23 of 52 J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

Analytical Report	
Lab Order <b>1808248</b>	

Hall Environmental Analysis Laboratory, Inc.	
--	--

Date Reported: 8/22/2018

CLIENT	CLIENT: Andeavor Bloomfield				Client Sample ID: MW-59							
Project:	San Juan River and RCR	A Wells	Collection Date: 8/3/2018 1:50:00 PM									
Lab ID:	1808248-011	Matrix:	AQUE	EOUS	Receiv	ved Dat	e: 8/4	/2018 10:15:00 AM				
Analyses	5	R	esult	PQL	Qual	Units	DF	Date Analyzed	Batch			
EPA ME	THOD 8270C: SEMIVOLAT	TILES						Analyst:	JDC			
Phenant	threne		ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686			
Phenol			ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686			
Pyrene			ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686			
Pyridine			ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686			
1,2,4-Tr	ichlorobenzene		ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686			
2,4,5-Tr	ichlorophenol		ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686			
2,4,6-Tr	ichlorophenol		ND	10		µg/L	1	8/13/2018 10:21:42 PM	39686			
Surr:	2-Fluorophenol		51.1	15-74.1		%Rec	1	8/13/2018 10:21:42 PM	39686			
Surr:	Phenol-d5		43.8	15-59.8		%Rec	1	8/13/2018 10:21:42 PM	39686			
Surr:	2,4,6-Tribromophenol		77.6	22.1-112		%Rec	1	8/13/2018 10:21:42 PM	39686			
Surr:	Nitrobenzene-d5		67.4	33.2-94		%Rec	1	8/13/2018 10:21:42 PM	39686			
Surr:	2-Fluorobiphenyl		71.3	34-90.9		%Rec	1	8/13/2018 10:21:42 PM	39686			
Surr:	4-Terphenyl-d14		88.6	15-149		%Rec	1	8/13/2018 10:21:42 PM	39686			
EPA ME	THOD 8260: VOLATILES S	HORT LIST						Analyst:	AG			
Benzene	e		23	1.0		µg/L	1	8/7/2018 3:49:51 PM	B53276			
Toluene			ND	1.0		µg/L	1	8/7/2018 3:49:51 PM	B53276			
Ethylber	nzene		76	1.0		µg/L	1	8/7/2018 3:49:51 PM	B53276			
Methyl t	ert-butyl ether (MTBE)		1400	100		µg/L	100	8/8/2018 2:17:28 PM	B53308			
Xylenes	, Total		ND	1.5		µg/L	1	8/7/2018 3:49:51 PM	B53276			
Surr:	4-Bromofluorobenzene		120	70-130		%Rec	1	8/7/2018 3:49:51 PM	B53276			
Surr:	Toluene-d8		99.6	70-130		%Rec	1	8/7/2018 3:49:51 PM	B53276			

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

**Qualifiers:** 

\*

- Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 24 of 52 J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

#### Hall Environmental Analysis Laboratory, Inc.

San Juan River and RCRA Wells

#### Client Sample ID: FIELD BLANK #1 Collection Date: 8/3/2018 2:40:00 PM

Lab ID: 1808248-012

**Project:** 

**CLIENT:** Andeavor Bloomfield

Matrix: AQUEOUS

Received Date: 8/4/2018 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst	Irm
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	8/9/2018 9:16:43 PM	39667
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/9/2018 9:16:43 PM	39667
Surr: DNOP	84.9	76.6-135		%Rec	1	8/9/2018 9:16:43 PM	39667
CARBON DIOXIDE						Analyst	sat
Total Carbon Dioxide	9.9	1.0	н	mg CO2/	1	8/8/2018 4:06:51 PM	R53305
EPA METHOD 300.0: ANIONS						Analyst	MRA
Fluoride	ND	0.10		mg/L	1	8/7/2018 9:32:12 PM	R53287
Chloride	ND	0.50		mg/L	1	8/7/2018 9:32:12 PM	R53287
Bromide	ND	0.10		mg/L	1	8/7/2018 9:32:12 PM	R53287
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2018 9:32:12 PM	R53287
Sulfate	ND	0.50		mg/L	1	8/7/2018 9:32:12 PM	R53287
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/8/2018 2:21:13 AM	R53285
SM2320B: ALKALINITY						Analyst	sat
Bicarbonate (As CaCO3)	ND	20.00		mɑ/L Ca	1	8/8/2018 4:06:51 PM	R53305
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/8/2018 4:06:51 PM	R53305
Total Alkalinity (as CaCO3)	ND	20.00		mg/L Ca	1	8/8/2018 4:06:51 PM	R53305
EPA METHOD 7470: MERCURY						Analyst	rde
Mercury	ND	0.00020		mg/L	1	8/6/2018 7:09:57 PM	39609
EPA METHOD 7470: MERCURY						Analyst	rde
Mercury	ND	0.00020		mg/L	1	8/17/2018 11:59:48 AM	39834
EPA METHOD 6010B: DISSOLVED METALS						Analyst	pmf
Arsenic	ND	0.020		mg/L	1	8/13/2018 5:21:19 PM	B53393
Barium	ND	0.020		mg/L	1	8/13/2018 2:22:12 PM	A53393
Cadmium	ND	0.0020		mg/L	1	8/13/2018 2:22:12 PM	A53393
Calcium	ND	1.0		mg/L	1	8/13/2018 2:22:12 PM	A53393
Chromium	ND	0.0060		mg/L	1	8/13/2018 2:22:12 PM	A53393
Copper	ND	0.0060		mg/L	1	8/13/2018 2:22:12 PM	A53393
Iron	ND	0.020		mg/L	1	8/13/2018 2:22:12 PM	A53393
Lead	ND	0.0050		mg/L	1	8/13/2018 2:22:12 PM	A53393
Magnesium	ND	1.0		mg/L	1	8/13/2018 2:22:12 PM	A53393
Manganese	ND	0.0020		mg/L	1	8/13/2018 2:22:12 PM	A53393
Potassium	ND	1.0		mg/L	1	8/13/2018 2:22:12 PM	A53393
Selenium	ND	0.050		mg/L	1	8/13/2018 2:22:12 PM	A53393
Silver	ND	0.0050		mg/L	1	8/13/2018 2:22:12 PM	A53393
Sodium	ND	1.0		mg/L	1	8/13/2018 2:22:12 PM	A53393
Uranium	ND	0.10		mg/L	1	8/13/2018 6:43:15 PM	A53387

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

**Oualifiers:** \* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
  - Н Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quanitative Limit
  - % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 25 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

#### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: FIELD BLANK #1 Collection Date: 8/3/2018 2:40:00 PM

Lab ID: 180

**Project:** 

**CLIENT:** Andeavor Bloomfield

San Juan River and RCRA Wells1808248-012Matrix: AQUEOUS

**Received Date:** 8/4/2018 10:15:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: DISSOLVED METALS					Analyst	: pmf
Zinc	ND	0.020	mg/L	1	8/13/2018 2:22:12 PM	- A53393
EPA 6010B' TOTAL RECOVERABLE METALS			Ū		Analyst	nmf
		0.020	ma/l	1	9/9/2019 11-50-51 AM	20612
Alsenic		0.020	mg/∟	1	0/0/2010 11.39.31 AM	20612
Cadmium		0.020	mg/L	1	9/7/2010 7.12.39 FW	20612
Chromium		0.0020	mg/L	1	8/7/2018 7:12:59 PM	30612
Lead		0.0000	mg/L	1	8/7/2018 7:12:59 PM	39612
Selenium	ND	0.0000	mg/L	1	8/7/2018 7:12:59 PM	39612
Silver	ND	0.000	mg/L	1	8/7/2018 7:12:59 PM	39612
EPA METHOD 8015D: GASOLINE RANGE	ne -	0.0000	iiig/ L		Analyst	· AG
		0.050	~~~~~/l	4	9/7/2019 4:12:16 DM	. <b>AG</b>
		0.050	mg/L	1	8/7/2018 4:13:16 PM	A53276
Sull: BFB	99.2	70-130	%Rec	.1	8/7/2018 4:13:16 PM	A53276
EPA METHOD 8270C: SEMIVOLATILES					Analyst	JDC
Acenaphthene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Acenaphthylene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Aniline	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Anthracene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Azobenzene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Benz(a)anthracene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Benzo(a)pyrene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Benzo(b)fluoranthene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Benzo(g,h,i)perylene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Benzo(k)fluoranthene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Benzoic acid	ND	20	µg/L	1	8/13/2018 10:51:29 PM	39686
Benzyl alcohol	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Bis(2-chloroethoxy)methane	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Bis(2-chloroethyl)ether	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Bis(2-chloroisopropyl)ether	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Bis(2-ethylhexyl)phthalate	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
4-Bromophenyl phenyl ether	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Butyl benzyl phthalate	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Carbazole	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
4-Chloro-3-methylphenol	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
4-Chloroaniline	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
2-Chloronaphthalene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
2-Chlorophenol	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
4-Chlorophenyl phenyl ether	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686
Chrysene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686

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

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
- PQL Practical Quanitative Limit
- 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 Page 26 of 52
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

CLIENT: Andeavor Bloomfield Project: San Juan River and RCRA Well Lab ID: 1808248-012	Client Sample ID: FIELD BLANK #1IsCollection Date: 8/3/2018 2:40:00 PMMatrix: AQUEOUSReceived Date: 8/4/2018 10:15:00 AM								
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch			
EPA METHOD 8270C: SEMIVOLATILES					Analyst:	JDC			
Di-n-butyl phthalate	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Di-n-octyl phthalate	ND	10	μg/L	1	8/13/2018 10:51:29 PM	39686			
Dibenz(a,h)anthracene	ND	10	μg/L	1	8/13/2018 10:51:29 PM	39686			
Dibenzofuran	ND	10	μg/L	1	8/13/2018 10:51:29 PM	39686			
1,2-Dichlorobenzene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
1,3-Dichlorobenzene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
1,4-Dichlorobenzene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
3,3´-Dichlorobenzidine	ND	10	μg/L	1	8/13/2018 10:51:29 PM	39686			
Diethyl phthalate	ND	10	μg/L	1	8/13/2018 10:51:29 PM	39686			
Dimethyl phthalate	ND	10	μg/L	1	8/13/2018 10:51:29 PM	39686			
2,4-Dichlorophenol	ND	20	μg/L	1	8/13/2018 10:51:29 PM	39686			
2,4-Dimethylphenol	ND	10	μg/L	1	8/13/2018 10:51:29 PM	39686			
4,6-Dinitro-2-methylphenol	ND	20	μg/L	1	8/13/2018 10:51:29 PM	39686			
2,4-Dinitrophenol	ND	20	µg/L	1	8/13/2018 10:51:29 PM	39686			
2,4-Dinitrotoluene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
2,6-Dinitrotoluene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Fluoranthene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Fluorene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Hexachlorobenzene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Hexachlorobutadiene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Hexachlorocyclopentadiene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Hexachloroethane	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Indeno(1,2,3-cd)pyrene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Isophorone	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
1-Methylnaphthalene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
2-Methylnaphthalene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
2-Methylphenol	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
3+4-Methylphenol	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
N-Nitrosodi-n-propylamine	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
N-Nitrosodimethylamine	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
N-Nitrosodiphenylamine	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Naphthalene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
2-Nitroaniline	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
3-Nitroaniline	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
4-Nitroaniline	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Nitrobenzene	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
2-Nitrophenol	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
4-Nitrophenol	ND	10	µg/L	1	8/13/2018 10:51:29 PM	39686			
Pentachlorophenol	ND	20	µg/L	1	8/13/2018 10:51:29 PM	39686			

#### Hall Environmental Analysis Laboratory, Inc.

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

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
- PQL Practical Quanitative Limit
- 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 Page 27 of 52
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1808248 Date Reported: 8/22/2018

Date Reported: 8/2

Analytical Report
Lab Order 1808248
Date Reported: 8/22/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

**Project:** San Juan River and RCRA Wells

Lab ID: 1808248-012

#### Client Sample ID: FIELD BLANK #1 Collection Date: 8/3/2018 2:40:00 PM Received Date: 8/4/2018 10:15:00 AM

Matrix: AQUEOUS

Qual Units DF Date Analyzed

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst	JDC
Phenanthrene	ND	10		µg/L	1	8/13/2018 10:51:29 PM	39686
Phenol	ND	10		µg/L	1	8/13/2018 10:51:29 PM	39686
Pyrene	ND	10		µg/L	1	8/13/2018 10:51:29 PM	39686
Pyridine	ND	10		µg/L	1	8/13/2018 10:51:29 PM	39686
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/13/2018 10:51:29 PM	39686
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/13/2018 10:51:29 PM	39686
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/13/2018 10:51:29 PM	39686
Surr: 2-Fluorophenol	63.9	15-74.1		%Rec	1	8/13/2018 10:51:29 PM	39686
Surr: Phenol-d5	53.8	15-59.8		%Rec	1	8/13/2018 10:51:29 PM	39686
Surr: 2,4,6-Tribromophenol	70.8	22.1-112		%Rec	1	8/13/2018 10:51:29 PM	39686
Surr: Nitrobenzene-d5	91.0	33.2-94		%Rec	1	8/13/2018 10:51:29 PM	39686
Surr: 2-Fluorobiphenyl	82.7	34-90.9		%Rec	1	8/13/2018 10:51:29 PM	39686
Surr: 4-Terphenyl-d14	95.0	15-149		%Rec	1	8/13/2018 10:51:29 PM	39686
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst	AG
Benzene	ND	1.0		µg/L	1	8/7/2018 4:13:16 PM	B53276
Toluene	ND	1.0		µg/L	1	8/7/2018 4:13:16 PM	B53276
Ethylbenzene	ND	1.0		µg/L	1	8/7/2018 4:13:16 PM	B53276
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/7/2018 4:13:16 PM	B53276
Xylenes, Total	ND	1.5		µg/L	1	8/7/2018 4:13:16 PM	B53276
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	1	8/7/2018 4:13:16 PM	B53276
Surr: Toluene-d8	99.1	70-130		%Rec	1	8/7/2018 4:13:16 PM	B53276

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

**Oualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н
- Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 28 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Project: Sai	i Juan River and RCRA wells		(	Collect	ion Date	8/3	5/2018	
Lab ID: 180	08248-013	Matrix: AQUE	EOUS	Receiv	ved Date:	<b>:</b> 8/4	4/2018 10:15:00 AM	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHO	D 8015D: DIESEL RANGE						Analyst	: Irm
Diesel Range	Organics (DRO)	ND	0.40		mg/L	1	8/9/2018 9:38:59 PM	39667
Motor Oil Rar	nge Organics (MRO)	ND	2.5		mg/L	1	8/9/2018 9:38:59 PM	39667
Surr: DNO	P	82.4	76.6-135		%Rec	1	8/9/2018 9:38:59 PM	39667
CARBON DIC	DXIDE						Analyst	sat
Total Carbon	Dioxide	990	1.0	Н	mg CO2/	1	8/8/2018 4:12:57 PM	R53305
EPA METHO	D 300.0: ANIONS						Analyst	MRA
Fluoride		ND	0.10		mg/L	1	8/7/2018 10:21:51 PM	R53287
Chloride		190	10		mg/L	20	8/7/2018 10:34:15 PM	R53287
Bromide		3.1	0.10		mg/L	1	8/7/2018 10:21:51 PM	R53287
Phosphorus,	Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2018 10:21:51 PM	R53287
Sulfate		180	10		mg/L	20	8/7/2018 10:34:15 PM	R53287
Nitrate+Nitrite	e as N	ND	1.0		mg/L	5	8/8/2018 2:33:37 AM	R53285
SM2320B: AL	_KALINITY						Analyst	sat
Bicarbonate (	As CaCO3)	1052	20.00		mg/L Ca	1	8/8/2018 4:12:57 PM	R53305
Carbonate (A	s CaCO3)	ND	2.000		mg/L Ca	1	8/8/2018 4:12:57 PM	R53305
Total Alkalinit	y (as CaCO3)	1052	20.00		mg/L Ca	1	8/8/2018 4:12:57 PM	R53305
EPA METHO	D 7470: MERCURY						Analyst	rde
Mercury		ND	0.00020		mg/L	1	8/6/2018 7:12:11 PM	39609
EPA METHO	D 7470: MERCURY						Analyst	rde
Mercury		ND	0.00020		mg/L	1	8/17/2018 12:02:02 PM	39834
EPA METHO	D 6010B: DISSOLVED METAL	S					Analyst	pmf
Arsenic		ND	0.020		mg/L	1	8/13/2018 5:22:47 PM	B53393
Barium		0.072	0.020		mg/L	1	8/13/2018 2:24:13 PM	A53393
Cadmium		ND	0.0020		mg/L	1	8/13/2018 2:24:13 PM	A53393
Calcium		180	5.0		mg/L	5	8/15/2018 11:55:51 AM	A53449
Chromium		ND	0.0060		mg/L	1	8/13/2018 2:24:13 PM	A53393
Copper		ND	0.0060		mg/L	1	8/13/2018 2:24:13 PM	A53393
Iron		7.4	0.20		mg/L	10	8/15/2018 11:57:15 AM	A53449
Lead		0.011	0.0050		mg/L	1	8/13/2018 2:24:13 PM	A53393
Magnesium		50	1.0		mg/L	1	8/13/2018 2:24:13 PM	A53393
Manganese		1.6	0.010		mg/L	5	8/15/2018 11:55:51 AM	A53449
Potassium		2.9	1.0		mg/L	1	8/13/2018 2:24:13 PM	A53393
Selenium		0.10	0.050		mg/L	1	8/13/2018 2:24:13 PM	A53393
Silver		ND	0.0050		mg/L	1	8/13/2018 2:24:13 PM	A53393
Sodium		420	5.0		mg/L	5	8/15/2018 11:55:51 AM	A53449
Uranium		ND	0.10		mg/L	1	8/13/2018 6:44:24 PM	A53387

#### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: DUPLICATE #1 Collection Data 9/2/2019

Project: San Juan River and RCRA Wells

**CLIENT:** Andeavor Bloomfield

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

\* **Qualifiers:** Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
  - Н Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quanitative Limit
  - % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 29 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

<b>CLIENT:</b>	Andeavor Bloomfield		Cl	ient Sample II	<b>D:</b> D	UPLICATE #1					
Project:	San Juan River and RCRA W	/ells	Collection Date: 8/3/2018								
Lab ID:	1808248-013	Matrix: AQUE	OUS	<b>Received Dat</b>	e: 8/	4/2018 10:15:00 AM					
Analyses		Result	PQL	Qual Units	DF	Date Analyzed	Batch				
EPA MET	THOD 6010B: DISSOLVED ME	TALS				Analyst	pmf				
Zinc		ND	0.020	mg/L	1	8/13/2018 2:24:13 PM	A53393				
EPA 6010	0B: TOTAL RECOVERABLE N	<b>IETALS</b>				Analyst	pmf				
Arsenic		ND	0.020	ma/l	1	8/8/2018 12:01:41 PM	39612				
Barium		0.12	0.020	mg/L	1	8/7/2018 7:14:26 PM	39612				
Cadmiun	n	ND	0.0020	ma/L	1	8/7/2018 7:14:26 PM	39612				
Chromiu	m	ND	0.0060	mg/L	1	8/7/2018 7:14:26 PM	39612				
Lead		ND	0.0050	mg/L	1	8/7/2018 7:14:26 PM	39612				
Selenium	n	ND	0.050	mg/L	1	8/7/2018 7:14:26 PM	39612				
Silver		ND	0.0050	mg/L	1	8/7/2018 7:14:26 PM	39612				
EPA MET	THOD 8015D: GASOLINE RAN	IGE				Analyst	AG				
Gasoline	Range Organics (GRO)	2.4	0.050	mg/L	1	8/7/2018 4:36:27 PM	A53276				
Surr: E	BFB	108	70-130	%Rec	1	8/7/2018 4:36:27 PM	A53276				
EPA MET	HOD 8270C: SEMIVOLATILE	S				Analyst	JDC				
Acenaph	thene	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Acenaph	thylene	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Aniline		ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Anthrace	ene	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Azobenz	ene	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Benz(a)a	anthracene	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Benzo(a)	)pyrene	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Benzo(b)	)fluoranthene	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Benzo(g	,h,i)perylene	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Benzo(k)	fluoranthene	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Benzoic	acid	ND	20	µg/L	1	8/13/2018 11:21:17 PM	39686				
Benzyl a	lcohol	ND	10	μg/L	1	8/13/2018 11:21:17 PM	39686				
Bis(2-chl	loroethoxy)methane	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Bis(2-chl	loroethyl)ether	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Bis(2-chl	loroisopropyl)ether	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Bis(2-eth	ylhexyl)phthalate	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
4-Bromo	phenyl phenyl ether	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Butyl ber	nzyl phthalate	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
Carbazo	le	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
4-Chloro	-3-methylphenol	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
4-Chloro	aniline	ND	10	µg/L	1	8/13/2018 11:21:17 PM	39686				
2-Chloro	naphthalene	ND	10	μg/L	1	8/13/2018 11:21:17 PM	39686				
2-Chloro	phenol	ND	10	μg/L	1	8/13/2018 11:21:17 PM	39686				
4-Chloro	phenyl phenyl ether	ND	10	μg/L	1	8/13/2018 11:21:17 PM	39686				
Chrysen	e	ND	10	μg/L	1	8/13/2018 11:21:17 PM	39686				
•											

## Hall Environmental Analysis Laboratory, Inc.

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

\* **Qualifiers:** Value exceeds Maximum Contaminant Level.

- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 30 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report							
Lab Order 1808248							
Date Reported: 8/22/2018							

CLIENT:	Andeavor Bloomfield		C	lient Sa	ample II	D: DI	UPLICATE #1	
Project:	San Juan River and RCRA Wells	5	(	Collect	ion Dat	e: 8/3	3/2018	
Lab ID:	1808248-013	Matrix: AQUEOU	S	Receiv	ved Dat	<b>e:</b> 8/4	4/2018 10:15:00 AM	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8270C: SEMIVOLATILES						Analyst:	JDC
Di-n-buty	/l phthalate	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Di-n-octy	l phthalate	ND	10		μg/L	1	8/13/2018 11:21:17 PM	39686
Dibenz(a	h,h)anthracene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Dibenzof	uran	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
1,2-Dichl	orobenzene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
1,3-Dichl	orobenzene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
1,4-Dichl	orobenzene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
3,3´-Dich	lorobenzidine	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Diethyl p	hthalate	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Dimethyl	phthalate	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
2,4-Dichl	orophenol	ND	20		µg/L	1	8/13/2018 11:21:17 PM	39686
2,4-Dime	ethylphenol	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
4,6-Dinitr	ro-2-methylphenol	ND	20		µg/L	1	8/13/2018 11:21:17 PM	39686
2,4-Dinitr	rophenol	ND	20		µg/L	1	8/13/2018 11:21:17 PM	39686
2,4-Dinitr	rotoluene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
2,6-Dinitr	rotoluene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Fluoranth	nene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Fluorene		ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Hexachlo	probenzene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Hexachlo	probutadiene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Hexachlo	procyclopentadiene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Hexachlo	proethane	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Indeno(1	,2,3-cd)pyrene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Isophoro	ne	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
1-Methylı	naphthalene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
2-Methyli	naphthalene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
2-Methyl	phenol	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
3+4-Meth	nylphenol	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
N-Nitroso	odi-n-propylamine	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
N-Nitroso	odimethylamine	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
N-Nitroso	odiphenylamine	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Naphthal	lene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
2-Nitroan	hiline	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
3-Nitroan	hiline	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
4-Nitroan	hiline	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Nitrobenz	zene	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
2-Nitroph	nenol	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
4-Nitroph	nenol	ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686
Pentachl	orophenol	ND	20		µg/L	1	8/13/2018 11:21:17 PM	39686

Hall Environmental Analysis Laboratory, Inc.

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

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
- PQL Practical Quanitative Limit
- 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 limit. Page 31 of 52
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report						
Lab Order 1808248						
Date Reported: 8/22/2018						

CLIENT: An	Cl	Client Sample ID: DUPLICATE #1									
Project: Sa	n Juan River and RCR	A Wells	Collection Date: 8/3/2018								
Lab ID: 18	08248-013	Matrix:	Matrix: AQUEOUS Received Date: 8/4/2018 10:15:00 AN								
Analyses		R	esult	PQL	Qual	Units	DF	Date Analyzed	Batch		
EPA METHO	D 8270C: SEMIVOLAT	TILES						Analyst	JDC		
Phenanthren	e		ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686		
Phenol			ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686		
Pyrene			ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686		
Pyridine			ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686		
1,2,4-Trichlor	robenzene		ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686		
2,4,5-Trichlor	rophenol		ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686		
2,4,6-Trichlor	rophenol		ND	10		µg/L	1	8/13/2018 11:21:17 PM	39686		
Surr: 2-Flu	lorophenol		64.7	15-74.1		%Rec	1	8/13/2018 11:21:17 PM	39686		
Surr: Phen	nol-d5		53.4	15-59.8		%Rec	1	8/13/2018 11:21:17 PM	39686		
Surr: 2,4,6	S-Tribromophenol		72.4	22.1-112		%Rec	1	8/13/2018 11:21:17 PM	39686		
Surr: Nitrol	benzene-d5		84.0	33.2-94		%Rec	1	8/13/2018 11:21:17 PM	39686		
Surr: 2-Flu	lorobiphenyl		83.7	34-90.9		%Rec	1	8/13/2018 11:21:17 PM	39686		
Surr: 4-Tei	rphenyl-d14		86.7	15-149		%Rec	1	8/13/2018 11:21:17 PM	39686		
EPA METHO	D 8260: VOLATILES S	HORT LIST						Analyst	: AG		
Benzene			23	1.0		µg/L	1	8/7/2018 4:36:27 PM	B53276		
Toluene			ND	1.0		µg/L	1	8/7/2018 4:36:27 PM	B53276		
Ethylbenzene	9		80	1.0		µg/L	1	8/7/2018 4:36:27 PM	B53276		
Methyl tert-bu	utyl ether (MTBE)		1400	100		µg/L	100	) 8/8/2018 2:40:40 PM	B53308		
Xylenes, Tota	al		ND	1.5		µg/L	1	8/7/2018 4:36:27 PM	B53276		
Surr: 4-Bro	omofluorobenzene		122	70-130		%Rec	1	8/7/2018 4:36:27 PM	B53276		
Surr: Tolue	ene-d8		102	70-130		%Rec	1	8/7/2018 4:36:27 PM	B53276		

#### Hall Environmental Analysis Laboratory, Inc.

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 32 of 52 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Envi	ronmental .	Analysis	Laboratory,	Inc.
-----------	-------------	----------	-------------	------

Date Reported: 8/22/2018

<b>CLIENT:</b> Andeavor Bloomfield		Client Sample ID: Trip Blank									
Project: San Juan River and RCRA Well	ls	Collection Date:									
Lab ID: 1808248-014	Matrix: AQUEOUS Received Date: 8/4/2018 10:15:00 A										
Analyses	R	esult	PQL	Qual	Units	DF	Date Analyzed	Batch			
EPA METHOD 8015D: GASOLINE RANG	E						Analyst	AG			
Gasoline Range Organics (GRO)		ND	0.050		mg/L	1	8/7/2018 4:59:47 PM	A53276			
Surr: BFB		102	70-130		%Rec	1	8/7/2018 4:59:47 PM	A53276			
EPA METHOD 8260: VOLATILES SHORT	LIST						Analyst	AG			
Benzene		ND	1.0		µg/L	1	8/7/2018 4:59:47 PM	B53276			
Toluene		ND	1.0		µg/L	1	8/7/2018 4:59:47 PM	B53276			
Ethylbenzene		ND	1.0		µg/L	1	8/7/2018 4:59:47 PM	B53276			
Methyl tert-butyl ether (MTBE)		ND	1.0		µg/L	1	8/7/2018 4:59:47 PM	B53276			
Xylenes, Total		ND	1.5		µg/L	1	8/7/2018 4:59:47 PM	B53276			
Surr: 4-Bromofluorobenzene		115	70-130		%Rec	1	8/7/2018 4:59:47 PM	B53276			
Surr: Toluene-d8		101	70-130		%Rec	1	8/7/2018 4:59:47 PM	B53276			

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

Qualifiers:	
-------------	--

\*

- Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 33 of 52 J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc

WO#:	1	18082					
			10				

Client: Project:	Andeavor San Juan	Bloomfie River and	eld PCPA	Walls							
	San Juan		KCKA	wells							
Sample ID	МВ	SampT	ype: <b>ml</b>	olk	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	PBW	Batch	n ID: <b>R5</b>	3287	F	RunNo: 5	3287				
Prep Date:		Analysis D	Date: 8/	7/2018	S	SeqNo: 1	753984	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		ND	0.10								
Bromide			0.50								
Phosphorus ()	rthonhosnhate (As P		0.10								
Sulfate	ninophosphale (As i	ND	0.50								
Sample ID	LCS	SampT	ype: Ics	5	Tes	tCode: El	PA Method	300.0: Anions	6		
Client ID:	LCSW	Batch	h ID: R5	3287	F	RunNo: 5	3287				
Prep Date:		Analysis D	Date: 8/	7/2018	S	SeqNo: 1	753985	Units: mg/L			
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		4.7	0.50	5.000	0	94.5	90	110			
Bromide		2.4	0.10	2.500	0	96.5	90	110			
Phosphorus, O	rthophosphate (As P	4.6	0.50	5.000	0	92.9	90	110			
Sulfate		9.3	0.50	10.00	0	93.1	90	110			
Sample ID	MB x2.5	SampT	ype: <b>ml</b>	olk	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	PBW	Batch	h ID: R5	3287	F	RunNo: 5	3287				
Prep Date:		Analysis D	Date: 8/	7/2018	S	SeqNo: 1	753996	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		ND	0.10								
Chloride		ND	0.50								
Bromide		ND	0.10								
Phosphorus, O	rthophosphate (As P	ND	0.50								-
Sulfate		1600	0.50								E*
Sample ID	1808248-001CMS	SampT	ype: ms	6	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	Upstream	Batch	h ID: R5	3287	F	RunNo: <b>5</b>	3287				
Prep Date:		Analysis D	Date: 8/	7/2018	S	SeqNo: 1	754008	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		0.62	0.10	0.5000	0	125	66.7	127			
Chloride		7.4	0.50	5.000	2.755	92.5	77.5	116			
Bromide		2.4	0.10	2.500	0	96.9	80.2	111			

#### **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
- PQL Practical Quanitative Limit
- 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

Page 34 of 52

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#: **1808248** 

22-Aug-18

Client:	Andeavor	Bloomfield		*** 11							
Project:	San Juan I	River and R	CRA	Wells							
Sample ID	1808248-001CMSD	SampType	e: <b>m</b>	sd	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	Upstream	Batch ID	: R5	53287	F	RunNo: 5	3287				
Prep Date:		Analysis Date	: 8	/7/2018	S	SeqNo: 1	754009	Units: mg/L			
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		0.63	0.10	0.5000	0	126	66.7	127	0.740	20	
Chloride		7.4	0.50	5.000	2.755	92.5	77.5	116	0.0324	20	
Bromide		2.4	0.10	2.500	0	97.2	80.2	111	0.345	20	
Sample ID MB SampType: mblk TestCode: EPA Method 300.0: Anions											
Client ID:	PBW	Batch ID	: R5	53285	F	RunNo: 5	3285				
Prep Date:		Analysis Date	: 8	/7/2018	5	SeqNo: 1	754314	Units: mg/L			
Analyte		Result F	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite	as N	ND	0.20								
Sample ID	LCS	SampType	: Ics	S	Tes	tCode: El	PA Method	300.0: Anions	;		
Client ID:	LCSW	Batch ID	: R5	53285	F	RunNo: 5	3285				
Prep Date:		Analysis Date	: 8	/7/2018	5	SeqNo: 1	754315	Units: mg/L			
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite	as N	3.5	0.20	3.500	0	98.9	90	110			
Sample ID	МВ	SampType	e: <b>m</b>	blk	Tes	tCode: El	PA Method	300.0: Anions	;		
Client ID:	PBW	Batch ID	: R5	53556	F	RunNo: 5	3556				
Prep Date:		Analysis Date	: 8	/17/2018	S	SeqNo: 1	765359	Units: mg/L			
Analyte		Result F	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	0.50								
Sulfate		ND	0.50								
Sample ID	LCS	SampType	e: Ic:	S	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	LCSW	Batch ID	: R5	53556	F	RunNo: 5	3556				
Prep Date:		Analysis Date	: 8	/17/2018	S	SeqNo: 1	765360	Units: mg/L			
Analyte		Result F	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		4.7	0.50	5.000	0	94.7	90	110			
Sulfate		9.3	0.50	10.00	0	92.9	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
- PQL Practical Quanitative Limit
- 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

Page 35 of 52

# **QC SUMMARY REPORT** Hall Environmental Analysis Laboratory, Inc.

WO#:	1808248
	22-Aug-18

Client: Project:	Andeavor San Juan	r Bloomfie River and	eld RCRA	Wells										
Sample ID	MB-39667	IB-39667 SampType: MBLK					TestCode: EPA Method 8015D: Diesel Range							
Client ID:	PBW	Batch ID: 39667			RunNo: <b>53283</b>									
Prep Date:	8/8/2018	Analysis D	Date: 8/	9/2018	S	SeqNo: 1	756124	Units: mg/L						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Diesel Range	Organics (DRO)	ND	0.40											
Motor Oil Rang	ge Organics (MRO)	ND	2.5											
Surr: DNOP		0.39		0.5000		78.8	76.6	135						
Sample ID	LCS-39667	SampT	Type: LC	s	TestCode: EPA Method 8015D: Diesel Range									
Client ID:	LCSW	Batch	667	R	anNo: 5									
Prep Date:	8/8/2018	Analysis Date: 8/9/2018			SeqNo: 1756125			Units: mg/L						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Diesel Range	Organics (DRO)	2.3	0.40	2.500	0	93.3	76.5	158						
Surr: DNOP		0.16		0.2500		66.0	76.6	135			S			
Sample ID	1808248-001BMS	IS SampType: MS TestCode: EPA Method 8015D: Diesel Range												
Client ID:	Upstream	Batch	h ID: 39	667	RunNo: <b>53283</b>									
Prep Date:	8/8/2018	Analysis Date: 8/9/2018			SeqNo: 1756127			Units: mg/L						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Diesel Range	Organics (DRO)	2.4	0.40	2.500	0	94.8	89.6	145						
Surr: DNOP	1	0.17		0.2500		69.2	76.6	135			S			
Sample ID	ID 1808248-001BMSD SampType: MSD TestCode: EPA Method 8015D: Diesel Range													
Client ID:	Upstream	Upstream Batch ID: 39667				RunNo: 53283								
Prep Date:	8/8/2018	2018 Analysis Date: 8/9/2018				SeqNo: <b>1756128</b> Uni								
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Diesel Range	Organics (DRO)	2.7	0.40	2.500	0	106	89.6	145	11.3	20				
Surr: DNOP		0.19		0.2500		76.7	76.6	135	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
- PQL Practical Quanitative Limit
- 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
- Page 36 of 52

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#: 1808248

22-Aug-18

Client:AndeavoProject:San Juan	r Bloomfie River and	eld RCRA	Wells									
Sample ID 100ng Ics	SampType: LCS4				TestCode: EPA Method 8260: Volatiles Short List							
Client ID: BatchQC	Batch ID: <b>B53243</b>			RunNo: <b>53243</b>								
Prep Date:	Analysis Date: 8/6/2018		SegNo: 1752149			Units: µq/L						
	Result	POI	SPK value	SPK Rof Val	%REC	Lowl imit	Highl imit	%RPD	RPDI imit	Qual		
Benzene	20	1.0	20.00	0	99.5	80	120			Quai		
Toluene	21	1.0	20.00	0	105	80	120					
Ethylbenzene	21	1.0	20.00	0	103	80	120					
Methyl tert-butyl ether (MTBE)	19	1.0	20.00	0	96.2	80	120					
Xylenes, Total	61	1.5	60.00	0	101	80	120					
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130					
Surr: Toluene-d8	10		10.00		103	70	130					
Sample ID 1808248-002ams SampType: MS4 TestCode: EPA Method 8260: Volatiles Short List												
Client ID: North of MW#45	Batc	h ID: <b>B5</b>	3243	F	RunNo: <b>53243</b>							
Prep Date:	Analysis E	Date: <b>8</b> /	7/2018	SeqNo: 1752152			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	80	120					
Toluene	21	1.0	20.00	0.2422	105	80	120					
Ethylbenzene	21	1.0	20.00	0	105	80	120					
Methyl tert-butyl ether (MTBE)	19	1.0	20.00	0	96.6	43.6	145					
Xylenes, Total	62	1.5	60.00	0.4208	103	80	120					
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130					
Surr: Toluene-d8	10		10.00		104	70	130					
Sample ID 1808248-002amsd SampType: MSD4				TestCode: EPA Method 8260: Volatiles Short List								
Client ID: North of MW#45	Batch ID: B53243			RunNo: <b>53243</b>								
Prep Date:	Analysis Date: 8/7/2018		SeqNo: 1752153			Units: µg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	20	1.0	20.00	0	98.4	80	120	2.80	20			
Toluene	21	1.0	20.00	0.2422	103	80	120	2.10	20			
Ethylbenzene	20	1.0	20.00	0	101	80	120	3.67	20			
Methyl tert-butyl ether (MTBE)	19	1.0	20.00	0	92.9	43.6	145	3.86	20			
Xylenes, I otal	59	1.5	60.00	0.4208	98.3	80	120	4.35	20			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130	0	0			
	10		10.00		103	70	130	0	0			
Sample ID rb SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List									
Client ID: PBW	Batch ID: B53243			RunNo: 53243								
Prep Date:	Analysis E	Date: 8/	6/2018	S	SeqNo: 1	752155	Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	ND	1.0										
<u> </u>												

#### 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

PQL Practical Quanitative Limit

- 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

Page 37 of 52
WO#: **1808248** 22-Aug-18

Client:	Andeavor	Bloomfi	eld								
Project:	San Juan R	River and	I RCRA	Wells							
Sample ID rb		Samp	Туре: <b>МЕ</b>	BLK	Tes	tCode: E	PA Method	8260: Volatil	es Short L	.ist	
Client ID: PBW		Batc	h ID: <b>B5</b>	3243	F	RunNo: 5	3243				
Prep Date:		Analysis [	Date: 8/	6/2018	Ś	SeqNo: 1	752155	Units: µg/L			
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 (MT	FBE)	ND	1.0								
Xylenes, Total		ND	1.5								
Surr: 4-Bromofluorober	izene	12		10.00		116	70	130			
Surr: Toluene-d8		9.9		10.00		99.2	70	130			
Sample ID 1808248	3-006ams	Samp	Type: MS	64	Tes	tCode: E	PA Method	8260: Volatil	es Short L	.ist	
Client ID: MW-68		Batc	h ID: <b>B5</b>	3276	F	RunNo: 5	3276				
Prep Date:		Analysis [	Date: 8/	7/2018	5	SeqNo: 1	753508	Units: µg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		20	1.0	20.00	0	100	80	120			
Toluene		21	1.0	20.00	0.1234	103	80	120			
Ethylbenzene		20	1.0	20.00	0	102	80	120			
Methyl tert-butyl ether (MT	FBE)	20	1.0	20.00	0.5160	99.5	43.6	145			
Xylenes, Total		62	1.5	60.00	0.3908	102	80	120			
Surr: 4-Bromofluorober	izene	10		10.00		104	70	130			
Surr: Toluene-d8		10		10.00		100	70	130			
Sample ID 1808248	3-006amsd	Samp	Туре: <b>М</b>	SD4	Tes	tCode: E	PA Method	8260: Volatil	es Short L	.ist	
Client ID: MW-68		Batc	h ID: <b>B5</b>	3276	F	RunNo: 5	3276				
Prep Date:		Analysis [	Date: 8/	7/2018	\$	SeqNo: 1	753509	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	80	120	3.28	20	
Toluene		20	1.0	20.00	0.1234	100	80	120	2.54	20	
Ethylbenzene		20	1.0	20.00	0	102	80	120	0.221	20	
Methyl tert-butyl ether (MT	FBE)	21	1.0	20.00	0.5160	101	43.6	145	1.29	20	
Xylenes, Total		59	1.5	60.00	0.3908	97.2	80	120	4.67	20	
Surr: 4-Bromofluorober	izene	10		10.00		104	70	130	0	0	
Surr: Toluene-d8		10		10.00		99.8	70	130	0	0	
Sample ID rb		Samp	Type: ME	BLK	Tes	tCode: E	PA Method	8260: Volatil	es Short L	.ist	
Client ID: PBW		Batc	h ID: <b>B5</b>	3276	F	RunNo: 5	3276				
Prep Date:		Analysis [	Date: 8/	7/2018	\$	SeqNo: 1	753518	Units: µg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		ND	1.0								
loluene		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

- PQL Practical Quanitative Limit
- 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

Page 38 of 52

WO#:		180	8248

Client: A Project: S	Andeavor Bloomfic an Juan River and	eld I RCRA	Wells							
Sample ID rb	Samp	Type: ME	BLK	Tes	tCode: EF	PA Method	8260: Volatile	es Short L	ist	
Client ID: PBW	Batc	h ID: <b>B5</b>	3276	F	anNo: 5	3276				
Prep Date:	Analysis [	Date: 8/	7/2018	S	SeqNo: 17	753518	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTE	BE) ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 4-Bromofluorobenz	ene 11		10.00		114	70	130			
Surr: Toluene-d8	9.8		10.00		98.2	70	130			
Sample ID 100ng Ic	s Samp <sup>-</sup>	Type: LC	S4	Tes	tCode: EF	PA Method	8260: Volatile	es Short L	ist	
Client ID: BatchQC	Batc	h ID: <b>B5</b>	3276	F	unNo: 5	3276				
Prep Date:	Analysis [	Date: 8/	7/2018	5	SeqNo: 17	753519	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.7	80	120			
Toluene	20	1.0	20.00	0	101	80	120			
Ethylbenzene	20	1.0	20.00	0	102	80	120			
Methyl tert-butyl ether (MTE	BE) 19	1.0	20.00	0	94.0	80	120			
Xylenes, Total	59	1.5	60.00	0	98.7	80	120			
Surr: 4-Bromofluorobenz	ene 10		10.00		101	70	130			
Surr: Toluene-d8	9.7		10.00		97.4	70	130			
Sample ID 100ng Ic	s Samp <sup>-</sup>	Type: LC	S4	Tes	tCode: EF	PA Method	8260: Volatile	es Short L	ist	
Client ID: BatchQC	Batc	h ID: <b>B5</b>	3308	F	aunNo: 5	3308				
Prep Date:	Analysis [	Date: 8/	8/2018	5	SeqNo: 17	755108	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTE	3E) 19	1.0	20.00	0	96.0	80	120			
Surr: 4-Bromofluorobenz	ene 10		10.00		105	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			
Sample ID rb	Samp	Type: ME	BLK	Tes	tCode: EF	PA Method	8260: Volatile	es Short L	ist	
Client ID: PBW	Batc	h ID: <b>B5</b>	3308	F	unNo: 5:	3308				
Prep Date:	Analysis [	Date: <b>8/</b>	8/2018	S	SeqNo: 17	755111	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTE	BE) ND	1.0								
Surr: 4-Bromofluorobenz	ene 12		10.00		116	70	130			
Surr: Toluene-d8	10		10.00		100	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
- PQL Practical Quanitative Limit
- 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

Page 39 of 52

1808248 WO#· 18

<b>W</b> Οπ.	10002
	22-Aug-1

Client: Andea	avor Bloomfie	eld	XX7 11							
Project: San Ju	an River and	KCR/	A wells							
Sample ID mb-39686	SampT	Уре: <b>М</b>	BLK	Tes	tCode: E	EPA Method	8270C: Semi	volatiles		
Client ID: PBW	Batch	n ID: 39	686	F	RunNo:	53401				
Prep Date: 8/9/2018	Analysis D	ate: 8	/13/2018	S	SeqNo: '	1758611	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	ND	20								
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	ND	10								
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								
Chrvsene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
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								
		-0								

#### **Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH Not In Range Р
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 40 of 52

WO#: 1808248 22-Aug-18

Client: Andeav	or Bloomfie	ld									
Project: San Jua	n River and	RCRA W	ells								
<b>.</b>											
Sample ID mb-39686	SampT	ype: MBLK		Tes	tCode: E	PA Method	8270C: Semi	volatiles			
Client ID: PBW	Batch	n ID: 39686		F	RunNo: 5	3401					
Prep Date: 8/9/2018	Analysis D	ate: 8/13/2	2018	S	SeqNo: 1	758611	Units: µg/L				
Analyte	Result	PQL SF	K 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	98	10	200.0		<u>4</u> 9 1	15	74 1				
Surry Phenol-d5	90 84		200.0		_10.1 ∡1 0	15	50.8				
Surr 2 4 6-Tribromonhenol	120		200.0		-1.3 60.4	22.1	112				
Surry Nitrohenzene_d5	65		200.0 100.0		64 A	22.1	Q/				
Surr 2. Fluorohinhonvi	60		100.0		62.1	21	00 Q				
	02 71		100.0		71 2	54 1 <i>5</i>	90.9 140				
Sull. 4-Telphellyl-014	11		100.0		11.3	CI	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
- PQL Practical Quanitative Limit
- 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

Page 41 of 52

WO#: 1808248 22-Aug-18

#### **Client:** Andeavor Bloomfield

**Project:** San Juan River and RCRA Wells

Sample ID Icsd-39686	SampType: LCSD TestCode: EPA Mer						ethod 8270C: Semivolatiles				
Client ID: LCSS02	Batcl	h ID: 39	686	R	RunNo: 5	3401					
Prep Date: 8/9/2018	Analysis E	Date: <b>8/</b>	13/2018	S	SeqNo: 1	758613	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Acenaphthene	84	10	100.0	0	84.1	55.1	104	2.29	34.9		
4-Chloro-3-methylphenol	190	10	200.0	0	94.5	57	115	11.7	30.2		
2-Chlorophenol	180	10	200.0	0	87.5	43.4	112	12.2	49.5		
1,4-Dichlorobenzene	69	10	100.0	0	69.0	38	95.2	1.49	43.2		
2,4-Dinitrotoluene	72	10	100.0	0	72.2	55.1	96.7	10.1	49.9		
N-Nitrosodi-n-propylamine	100	10	100.0	0	103	55	112	8.49	42.1		
4-Nitrophenol	97	10	200.0	0	48.6	16.6	93	102	31.5	R	
Pentachlorophenol	140	20	200.0	0	67.6	43.2	104	59.9	52.5	R	
Phenol	110	10	200.0	0	56.3	21.3	85.7	12.7	54.4		
Pyrene	86	10	100.0	0	86.0	64.9	105	9.40	30.7		
1,2,4-Trichlorobenzene	78	10	100.0	0	77.6	42.6	107	2.90	48.1		
Surr: 2-Fluorophenol	130		200.0		64.0	15	74.1	0	0		
Surr: Phenol-d5	110		200.0		55.1	15	59.8	0	0		
Surr: 2,4,6-Tribromophenol	150		200.0		75.4	22.1	112	0	0		
Surr: Nitrobenzene-d5	87		100.0		86.8	33.2	94	0	0		
Surr: 2-Fluorobiphenyl	77		100.0		77.3	34	90.9	0	0		
Surr: 4-Terphenyl-d14	90		100.0		89.9	15	149	0	0		
						-		Ĵ.	ő		
Sample ID Ics-39686	SampT	ype: LC	S	Tes	tCode: El	PA Method	8270C: Semi	volatiles			
Sample ID Ics-39686 Client ID: LCSW	Samp1 Batcl	ype: LC	S 686	Tes	tCode: El	PA Method 3401	8270C: Semi	volatiles			
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018	SampT Batcl Analysis D	Type: LC h ID: 390 Date: 8/	S 686 13/2018	Tes R S	tCode: El RunNo: 5 SeqNo: 1	PA Method 3401 758614	8270C: Semi Units: μg/L	volatiles			
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte	SampT Batch Analysis D Result	ype: LC h ID: 390 Date: 8/	<b>S</b> 686 13/2018 SPK value	Tes R S SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 3401 758614 LowLimit	8270C: Semi Units: µg/L HighLimit	volatiles %RPD	RPDLimit	Qual	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene	SampT Batcl Analysis D Result 82	Type: LC h ID: 39 Date: 8/ PQL 10	S 686 13/2018 SPK value 100.0	Tes F S SPK Ref Val 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2	PA Method 3401 758614 LowLimit 55.1	8270C: Semi Units: µg/L HighLimit 104	volatiles %RPD	RPDLimit	Qual	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol	SampT Batcl Analysis E Result 82 170	Type: LC h ID: 390 Date: 8/ PQL 10 10	<b>S</b> 686 13/2018 SPK value 100.0 200.0	Tes R SPK Ref Val 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1	PA Method 3401 758614 LowLimit 55.1 57	8270C: Semi Units: µg/L HighLimit 104 115	volatiles %RPD	RPDLimit	Qual	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol	SampT Batcl Analysis E Result 82 170 150	Type: LC h ID: 390 Date: 8/ PQL 10 10 10	<b>S</b> 686 13/2018 SPK value 100.0 200.0 200.0	Tes R SPK Ref Val 0 0 0	tCode: El RunNo: 5 GeqNo: 1 %REC 82.2 84.1 77.5	PA Method 3401 758614 LowLimit 55.1 57 43.4	8270C: Semi Units: μg/L HighLimit 104 115 112	volatiles %RPD	RPDLimit	Qual	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene	SampT Batcl Analysis E Result 82 170 150 68	Type: <b>LC</b> In ID: <b>39</b> Date: <b>8</b> PQL 10 10 10 10	<b>S</b> <b>686</b> <b>13/2018</b> SPK value 100.0 200.0 200.0 100.0	Tes F SPK Ref Val 0 0 0 0 0	tCode: El RunNo: 5 GeqNo: 1 %REC 82.2 84.1 77.5 68.0	PA Method 3401 758614 LowLimit 55.1 57 43.4 38	8270C: Semi Units: µg/L HighLimit 104 115 112 95.2	volatiles %RPD	RPDLimit	Qual	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene	SampT Batcl Analysis E Result 82 170 150 68 65	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0	Tes: F SPK Ref Val 0 0 0 0 0 0 0	tCode: El RunNo: 5 GeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1	8270C: Semi Units: μg/L HighLimit 104 115 112 95.2 96.7	volatiles %RPD	RPDLimit	Qual	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine	SampT Batcl Analysis E Result 82 170 150 68 65 94	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 100.0	Tes F SPK Ref Val 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55	8270C: Semi Units: µg/L HighLimit 104 115 112 95.2 96.7 112	volatiles %RPD	RPDLimit	Qual	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol	SampT Batcl Analysis E Result 82 170 150 68 65 94 32	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 100.0 200.0	Tes: R SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6	8270C: Semi Units: µg/L HighLimit 104 115 112 95.2 96.7 112 93	volatiles %RPD	RPDLimit	Qual	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol	SampT Batcl Analysis E Result 82 170 150 68 65 94 32 73	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 10 20	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 200.0 200.0	Tes R SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2	8270C: Semi Units: µg/L HighLimit 104 115 112 95.2 96.7 112 93 104	volatiles %RPD	RPDLimit	Qual S S	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol	SampT Batcl Analysis E Result 82 170 150 68 65 94 32 73 99	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 10 20 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 100.0 200.0 200.0 200.0 200.0	Tes R SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 GeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3	8270C: Semi Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7	volatiles %RPD	RPDLimit	Qual S S	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene	SampT Batcl Analysis E Result 82 170 150 68 65 94 32 73 99 78	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 10 10 20 10 10	S 686 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 200.0 200.0 200.0 200.0 100.0 200.0 100.0 200.0 200.0 100.0	Tes: F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 GeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9	8270C: Semi Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105	volatiles %RPD	RPDLimit	Qual S S	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene 1,2,4-Trichlorobenzene	SampT Batcl Analysis E Result 82 170 150 68 65 94 32 73 99 78 75	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 10 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 200.0 200.0 200.0 200.0 100.0 100.0 100.0 100.0 100.0	Tes: F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3 75.4	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9 42.6	8270C: Semin Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105 107	volatiles %RPD	RPDLimit	Qual S S	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene 1,2,4-Trichlorobenzene Surr: 2-Fluorophenol	SampT Batcl Analysis E Result 82 170 150 68 65 94 32 73 99 78 75 110	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 10 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 20	Tes:	tCode: El RunNo: 5 GeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3 75.4 53.7	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9 42.6 15	8270C: Semin Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105 107 74.1	volatiles %RPD	RPDLimit	Qual S S	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene 1,2,4-Trichlorobenzene Surr: 2-Fluorophenol Surr: Phenol-d5	SampT Batcl Analysis E Result 82 170 150 68 65 94 32 73 99 78 75 110 100	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 10 20 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 20	Tes:	tCode: El RunNo: 5 GeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3 75.4 53.7 49.9	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9 42.6 15 15	8270C: Semir Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105 107 74.1 59.8	volatiles %RPD	RPDLimit	Qual S S	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene 1,2,4-Trichlorobenzene Surr: 2-Fluorophenol Surr: Phenol-d5 Surr: 2,4,6-Tribromophenol	SampT Batcl Analysis E Result 82 170 150 68 65 94 32 73 99 78 75 110 100 140	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 20 10 10 10 10 10	S 586 586 13/2018 SPK value 100.0 200.0 200.0 100.0 200.	Tes R S SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 GeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3 75.4 53.7 49.9 68.2	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9 42.6 15 15 22.1	8270C: Semir Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105 107 74.1 59.8 112	volatiles %RPD	RPDLimit	Qual S S	
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene 1,2,4-Trichlorobenzene Surr: 2-Fluorophenol Surr: Phenol-d5 Surr: 2,4,6-Tribromophenol Surr: Nitrobenzene-d5	SampT Batcl Analysis E Result 82 170 150 68 65 94 32 73 99 78 75 110 100 140 80	Type: LC h ID: 390 Date: 8/ 10 10 10 10 10 10 10 10 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 100.0 200.0 200.0 100.0 200.0 100.0 200.0 100.0 200.0 100.0 200.0 100.0 200.0 100.0 200.0 100.0 200.0 100.0 200.0 100.0 200.0 100.0 200.0 100.0 200.0 100.0 20	Tes R S SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: EI 2unNo: 5 3eqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3 75.4 53.7 49.9 68.2 80.2	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9 42.6 15 15 22.1 33.2	8270C: Semir Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105 107 74.1 59.8 112 94	volatiles %RPD	RPDLimit	Qual S S	

#### **Qualifiers:**

Value exceeds Maximum Contaminant Level. \*

Sample Diluted Due to Matrix D

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit PQL
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank

Е Value above quantitation range

- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 42 of 52

WO#:	1808248
	22-Aug-18

Client: Project:	Andea San Ju	vor Bloomfiel an River and	ld RCRA	Wells							
Sample ID	lcs-39686	SampT	ype: LC	s	Tes	tCode: E	PA Method	8270C: Semi	volatiles		
Client ID:	LCSW	Batch	ID: 39	686	RunNo: 53401						
Prep Date:	8/9/2018	Analysis D	ate: 8/	/13/2018	S	SeqNo: 1	758614	Units: µg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terph	enyl-d14	87		100.0		86.5	15	149			

#### **Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH Not In Range Р
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 43 of 52

WO#:		180	8248

Client: Project:	Andeavor San Juan	Bloomfie River and	eld I RCR	A Wells							
Sample ID	MB-39609	Samp	Туре: 🛙	/IBLK	Test	tCode: El	PA Method	7470: Mercur	у		
Client ID:	PBW	Batc	h ID: 🕄	9609	R	unNo: 5	3253				
Prep Date:	8/6/2018	Analysis [	Date:	8/6/2018	S	eqNo: 1	752477	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.0002	0							
Sample ID	LCS-39609	Samp	Туре: І	_CS	Test	tCode: El	PA Method	7470: Mercur	у		
Client ID:	LCSW	Batc	h ID: 🕄	9609	R	unNo: 5	3253				
Prep Date:	8/6/2018	Analysis [	Date:	8/6/2018	S	eqNo: 1	752479	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0051	0.0002	0 0.005000	0	101	80	120			
Sample ID	MB-39834	Samp	Туре: 🛚	/IBLK	Test	tCode: El	PA Method	7470: Mercur	у		
Client ID:	PBW	Batc	h ID: 🕄	9834	R	unNo: 5	3523				
Prep Date:	8/16/2018	Analysis [	Date:	8/17/2018	S	eqNo: 1	764139	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.0002	0							
Sample ID	LCS-39834	Samp	Туре: <b>І</b>	CS	Test	tCode: El	PA Method	7470: Mercur	у		
Client ID:	LCSW	Batc	h ID: 🕃	9834	R	unNo: 5	3523				
Prep Date:	8/16/2018	Analysis [	Date:	8/17/2018	S	eqNo: 1	764140	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0048	0.0002	0 0.005000	0	95.9	80	120			
Sample ID	1808248-002EMS	Samp	Туре: 🛚	IS	Test	tCode: El	PA Method	7470: Mercur	у		
Client ID:	North of MW#45	Batc	h ID: 🕄	9834	R	unNo: 5	3523				
Prep Date:	8/16/2018	Analysis [	Date:	8/17/2018	S	eqNo: 1	764143	Units: <b>mg/L</b>			
Analyte		Result	PQL	. SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0044	0.0002	0 0.005000	0	88.8	75	125			
Sample ID	1808248-002EMS	Samp	Type: I	ISD	Test	tCode: El	PA Method	7470: Mercur	у		
Client ID:	North of MW#45	Batc	h ID: 🕄	9834	R	unNo: 5	3523				
Prep Date:	8/16/2018	Analysis [	Date:	8/17/2018	S	eqNo: 1	764144	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0045	0.0002	0 0.005000	0	89.7	75	125	0.945	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
- PQL Practical Quanitative Limit
- 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

Page 44 of 52

Andeavor Bloomfield

**Client:** 

WO#: **1808248** 

Project:	San Juan	River and	l RCRA	A Wells							
Sample ID	MB-A	Samp	Туре: <b>М</b>	BLK	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Bato	h ID: A	53393	F	RunNo: 5	3393				
Prep Date:		Analysis I	Date: 8	/13/2018	5	SeqNo: 1	758349	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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	LCS-A	Samp	Туре: <b>L(</b>	cs	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Bato	h ID: A	53393	F	RunNo: 5	3393				
Prep Date:		Analysis I	Date: 8	/13/2018	S	SeqNo: 1	758351	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.49	0.020	0.5000	0	98.4	80	120			
Cadmium		0.50	0.0020	0.5000	0	100	80	120			
Calcium		47	1.0	50.00	0	93.6	80	120			
Chromium		0.47	0.0060	0.5000	0	94.2	80	120			
Copper		0.48	0.0060	0.5000	0	96.5	80	120			
Iron		0.48	0.020	0.5000	0	96.8	80	120			
Lead		0.49	0.0050	0.5000	0	97.1	80	120			
Magnesium		47	1.0	50.00	0	94.2	80	120			
Manganese		0.48	0.0020	0.5000	0	95.9	80	120			
Potassium		45	1.0	50.00	0	90.0	80	120			
Selenium		0.47	0.050	0.5000	0	93.3	80	120			
Silver		0.098	0.0050	0.1000	0	98.0	80	120			
Sodium		49	1.0	50.00	0	97.9	80	120			
Zinc		0.47	0.020	0.5000	0	95.0	80	120			
Sample ID	1808248-001EMS	Samp	Туре: М	s	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	Upstream	Bato	h ID: A	53393	F	RunNo: 5	3393				
Prep Date:		Analysis I	Date: 8	/13/2018	S	SeqNo: 1	758397	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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
- PQL Practical Quanitative Limit
- 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

Page 45 of 52

WO#: **1808248** 22-Aug-18

#### Client: Andeavor Bloomfield

Project: San Juan River and RCRA Wells

Sample ID	1808248-001EMS	Samp	Туре: М	6	Tes	TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	Upstream	Bato	h ID: A5	3393	F	RunNo: 53393					
Prep Date:		Analysis	Date: 8/	13/2018	S	SeqNo: 1	758397	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.57	0.020	0.5000	0.06574	99.9	75	125			
Cadmium		0.51	0.0020	0.5000	0	102	75	125			
Calcium		77	1.0	50.00	30.35	92.9	75	125			
Chromium		0.47	0.0060	0.5000	0	94.2	75	125			
Copper		0.48	0.0060	0.5000	0	96.7	75	125			
Iron		0.49	0.020	0.5000	0.01236	96.0	75	125			
Lead		0.48	0.0050	0.5000	0	96.6	75	125			
Magnesium		54	1.0	50.00	5.278	97.4	75	125			
Manganese		0.48	0.0020	0.5000	0.002210	95.3	75	125			
Potassium		48	1.0	50.00	1.621	93.3	75	125			
Selenium		0.53	0.050	0.5000	0	107	75	125			
Silver		0.11	0.0050	0.1000	0	105	75	125			
Sodium		62	1.0	50.00	15.32	94.1	75	125			
Zinc		0.56	0.020	0.5000	0.08574	94.0	75	125			
Sample ID	1808248-001EMS	<b>)</b> Samp	Туре: <b>М</b>	SD	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	Upstream	Bato	ch ID: A5	3393	RunNo: <b>53393</b>						
Prep Date:		Analysis	Date: 8/	13/2018	S	SeqNo: 1	758398	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.57	0.020	0.5000	0.06574	100	75	125	0.0990	20	
Cadmium		0.51	0.0020	0.5000	0	102	75	125	0.198	20	
Calcium		79	1.0	50.00	30.35	96.4	75	125	2.27	20	
Chromium		0.47	0.0060	0.5000	0	94.1	75	125	0.0701	20	
Copper		0.48	0.0060	0.5000	0	96.7	75	125	0.00207	20	
Iron		0.50	0.020	0.5000	0.01236	96.5	75	125	0.547	20	
Lead		0.49	0.0050	0.5000	0	97.3	75	125	0.714	20	
Magnesium		56	1.0	50.00	5.278	102	75	125	3.86	20	
Manganese		0.48	0.0020	0.5000	0.002210	95.4	75	125	0.102	20	
Potassium		50	1.0	50.00	1.621	97.1	75	125	3.88	20	
Selenium		0.54	0.050	0.5000	0	107	75	125	0.401	20	
Silver		0.10	0.0050	0.1000	0	103	75	125	2.37	20	
Sodium		65	1.0	50.00	15.32	98.8	75	125	3.75	20	
Zinc		0.56	0.020	0.5000	0.08574	94.0	75	125	0.0360	20	
Sample ID	MB-B	Samp	Туре: МЕ	BLK	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Bato	ch ID: <b>B5</b>	3393	F	RunNo: 5	3393				
Prep Date:		Analysis	Date: 8/	13/2018	5	SeqNo: 1	758437	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.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

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

Page 46 of 52

WO#:	1808248
	22-Aug-18

Client: Project:	Andeavor San Juan	Bloomfield River and	i RCRA	Wells							
Sample ID	MB-B	SampTy	pe: ME	BLK	TestCode: EPA Method 6010B: Dissolved Metals						
Client ID:	PBW	Batch	D: <b>B</b> 5	3393	R	RunNo: <b>53393</b>					
Prep Date:		Analysis Da	te: 8/	13/2018	S	SeqNo: 1	758437	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	0.020								
Sample ID	LCS-B	SampTy	pe: LC	s	Test	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Batch	D: <b>B5</b>	3393	R	unNo: <b>5</b>	3393				
Prep Date:		Analysis Da	te: <b>8/</b>	13/2018	S	eqNo: 1	758439	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.48	0.020	0.5000	0	95.5	80	120			
Sample ID	1808248-001EMS	SampTy	pe: M\$	6	TestCode: EPA Method 6010B: Dissolved Metals						
Client ID:	Upstream Batch ID: B53393				RunNo: <b>53393</b>						
Prep Date:		Analysis Da	te: <b>8</b> /	13/2018	s	eqNo: 1	758494	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.48	0.020	0.5000	0	96.3	75	125			
Sample ID	1808248-001EMSI	<b>)</b> SampTy	pe: M\$	SD	TestCode: EPA Method 6010B: Dissolved Metals						
Client ID:	Upstream	Batch	D: <b>B</b> 5	3393	R	unNo: 5	3393				
Prep Date:		Analysis Da	te: <b>8</b> /	13/2018	S	eqNo: 1	758495	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.47	0.020	0.5000	0	93.9	75	125	2.56	20	
Sample ID	MB-A	SampTy	pe: MB	BLK	Test	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batch	D: <b>A5</b>	3387	R	unNo: 5	3387				
Prep Date:		Analysis Da	te: <b>8</b> /	13/2018	S	eqNo: 1	759133	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium		ND	0.10								
Sample ID	LCS-A	SampTy	pe: LC	s	Test	Code: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Batch	D: A5	3387	R	unNo: 5	3387				
Prep Date:		Analysis Da	te: <b>8</b> /	13/2018	S	eqNo: 1	759135	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	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
- PQL Practical Quanitative Limit
- 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
- Page 47 of 52

WO#:	1808248
	22-Aug-18

Client: Project:	Andeavor San Juan	Bloomfi River and	eld I RCR	A Wells									
Sample ID	1808248-001EMS	Samp	Type: N	IS	TestCode: EPA Method 6010B: Dissolved Metals								
Client ID:	Upstream	Batc	h ID: A	53387	F	RunNo: <b>53387</b>							
Prep Date:		Analysis [	Date: 8	8/13/2018	S	eqNo: 1	759137	Units: mg/L					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Uranium		0.43	0.10	0.5000	0	86.0	75	125					
Sample ID	D     1808248-001EMSD     SampType:     MSD     TestCode:     EPA Method 6010B:     Dissolved Metals												
Client ID:	Upstream	Batc	h ID: A	53387	F	RunNo: <b>53387</b>							
Prep Date:		Analysis [	Date: 8	8/13/2018	S	eqNo: 1	759138	Units: mg/L					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Uranium		0.44	0.10	0.5000	0	89.0	75	125	3.41	20			
Sample ID	MB-A	Samp	Type: N	IBLK	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als			
Client ID:	PBW	Batc	h ID: A	53449	RunNo: <b>53449</b>								
Prep Date:		Analysis [	Date:	8/15/2018	S	eqNo: 1	761183	Units: mg/L					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Calcium		ND	1.(	)									
Iron		ND	0.020	)									
Manganese		ND	0.0020	)									
Sodium		ND	1.0	)									
Sample ID	LCS-A	Samp	Type: L	CS	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als			
Client ID:	LCSW	Batc	hID: A	53449	F	unNo: 5	3449						
Prep Date:		Analysis [	Date: 8	8/15/2018	5	eqNo: 1	761185	Units: <b>mg/L</b>					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Calcium		50	1.0	50.00	0	99.2	80	120					
Iron		0.50	0.020	0.5000	0	100	80	120					
Manganese		0.51	0.0020	0.5000	0	101	80	120					
Sodium		48	1.0	50.00	0	95.4	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
- PQL Practical Quanitative Limit
- 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
- Page 48 of 52

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#:	1808248
	22-149-18

22-Aug-18
-----------

Client:	Ande	avor Bloomfi	eld	XX7 . 11 .									
Project:	San J	uan River and		wells									
Sample ID	MB-39612	Samp	Type: ME	BLK	TestCode: EPA 6010B: Total Recoverable Metals								
Client ID:	PBW	Bato	h ID: <b>39</b>	612	R	RunNo: 53279							
Prep Date:	8/6/2018	Analysis I	Date: 8/	7/2018	S	eqNo: 1	753695	Units: mg/L					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
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-39612	Samp	Type: LC	S	Tes	TestCode: EPA 6010B: Total Recoverable Metals							
Client ID:	LCSW	Batc	:h ID: <b>39</b> 0	612	R	RunNo: 53279							
Prep Date:	8/6/2018	Analysis I	Analysis Date: 8/7/2018			eqNo: 1	753697	Units: <b>mg/L</b>					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Barium		0.49	0.020	0.5000	0	98.8	80	120					
Cadmium		0.51	0.0020	0.5000	0	103	80	120					
Chromium		0.50	0.0060	0.5000	0	99.0	80	120					
Lead		0.50	0.0050	0.5000	0	99.5	80	120					
Selenium		0.49	0.050	0.5000	0	97.6	80	120					
Silver		0.11	0.0050	0.1000	0	108	80	120					
Sample ID	MB-39612	Samp	Туре: МЕ	BLK	Tes	tCode: El	PA 6010B:	Total Recover	able Meta	als			
Client ID:	PBW	Batc	;h ID: <b>39</b> 4	612	R	unNo: 5	3284						
Prep Date:	8/6/2018	Analysis I	Date: 8/	8/2018	S	eqNo: 1	754540	Units: mg/L					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Arsenic		ND	0.020										
Sample ID	LCS-39612	Samp	Type: LC	S	Tes	tCode: El	PA 6010B:	Total Recover	able Meta	als			
Client ID:	LCSW	Bato	:h ID: <b>39</b> 0	612	R	unNo: 5	3284						
Prep Date:	8/6/2018	Analysis I	Date: 8/	8/2018	S	eqNo: 1	754542	Units: mg/L					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Arsenic		0.50	0.020	0.5000	0	99.9	80	120					

#### **Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Page 49 of 52

WO#:	18	808248
	22	10

Client:	Andeavor	Bloomfiel	d									
Project:	San Juan	River and	RCRA	A Wells								
Sample ID	1808248-001ams	SampTy	ре: М	S	TestCode: EPA Method 8015D: Gasoline Range							
Client ID:	Upstream	Batch	ID: <b>A</b>	53243	F	RunNo: <b>53243</b>						
Prep Date:		Analysis Da	te: 8	8/7/2018	S	SeqNo: 1	752026	Units: <b>mg/L</b>				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Rang	ge Organics (GRO)	0.48	0.050	0.5000	0.03280	89.6	63.4	130				
Surr: BFB		9.6		10.00		95.5	70	130				
Sample ID	1808248-001amsd	I SampTy	ре: М	SD	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e		
Client ID:	Upstream	Batch	ID: A	53243	F	RunNo: 5	3243					
Prep Date:		Analysis Da	te: 8	8/7/2018	S	SeqNo: 1	752027	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Rang	ge Organics (GRO)	0.47	0.050	0.5000	0.03280	86.7	63.4	130	3.08	20		
Surr: BFB		9.3		10.00		92.9	70	130	0	0		
Sample ID	2.5ug gro lcs	cs	TestCode: EPA Method 8015D: Gasoline Range									
Client ID:	LCSW	Batch	ID: <b>A</b>	53243	F	RunNo: 5	3243					
Prep Date:		Analysis Da	te: 8	8/6/2018	S	SeqNo: 1	752030	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Rang	ge Organics (GRO)	0.52	0.050	0.5000	0	103	70	130				
Surr: BFB		9.4		10.00		94.4	70	130				
Sample ID	rb	SampTy	pe: <b>M</b>	BLK	TestCode: EPA Method 8015D: Gasoline Range							
Client ID:	PBW	Batch	ID: <b>A</b>	53243	F	RunNo: 5	3243					
Prep Date:		Analysis Da	te: 8	8/6/2018	Ş	SeqNo: 1	752031	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Rang	ge Organics (GRO)	ND	0.050	1								
Surr: BFB		10		10.00		104	70	130				
Sample ID	1808248-004ams	SampTy	ре: М	S	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e		
Client ID:	Downstream	Batch	ID: <b>A</b> /	53276	F	RunNo: <b>5</b>	3276					
Prep Date:		Analysis Da	te: 8	8/7/2018	S	SeqNo: 1	753389	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Rang	ge Organics (GRO)	0.54	0.050	0.5000	0.01500	104	63.4	130				
Surr: BFB		9.5		10.00		94.6	70	130				
Sample ID	1808248-004amsd	I SampTy	ре: М	SD	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e		
Client ID:	Downstream	Batch	ID: <b>A</b>	53276	F	RunNo: 5	3276					
Prep Date:		Analysis Da	te: 8	8/7/2018	S	SeqNo: 1	753390	Units: mg/L				
Ampluta		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

#### **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

PQL Practical Quanitative Limit

- 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

Page 50 of 52

## Client:Andeavor BloomfieldProject:San Juan River and RCRA Wells

Sample ID 18	808248-004amsd	SampType: MSD TestCode: EPA Method 8015D: Gasoline Ran							line Rang	e	
Client ID: D	ownstream	Batch	ID: <b>A5</b>	3276	F	RunNo: 5	3276				
Prep Date:		Analysis D	ate: <b>8/</b>	7/2018	S	SeqNo: 1	753390	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range C	Organics (GRO)	0.50	0.050	0.5000	0.01500	97.3	63.4	130	6.74	20	
Surr: BFB		9.5		10.00		94.6	70	130	0	0	
Sample ID         2.5UG GRO LCS         SampType:         LCS         TestCode:         EPA Method 8015D:         Gasoline Range											
Client ID: L	CSW	Batch	ID: <b>A5</b>	3276	F	RunNo: 5	3276				
Prep Date:		Analysis D	ate: <b>8/</b>	7/2018	S	SeqNo: 1	753404	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range C	Organics (GRO)	0.54	0.050	0.5000	0	109	70	130			
Surr: BFB		9.7		10.00		96.6	70	130			
Sample ID rt	þ	SampT	ype: <b>ME</b>	BLK	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID: P	BW	Batch	ID: <b>A5</b>	3276	F	RunNo: 5	3276				
Prep Date:		Analysis D	ate: <b>8/</b>	7/2018	S	SeqNo: 1	753405	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range C	Organics (GRO)	ND	0.050								
Surr: BFB		10		10.00		101	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
- PQL Practical Quanitative Limit
- 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
- Page 51 of 52

WO#:	1808248
	22-Aug-18

Client:	А	ndeavor Bloomfield								
Project:	S	an Juan River and RCR	A Wells							
Sample ID	mb-1 alk	SampType: r	nblk	Tes	tCode: SI	M2320B: AI	kalinity			
Client ID:	PBW	Batch ID: F	R53305	R	RunNo: 5:	3305				
Prep Date:		Analysis Date:	8/8/2018	S	SeqNo: 17	754671	Units: mg/L	CaCO3		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	y (as CaCO3)	ND 20.0	0							
Sample ID	lcs-1 alk	SampType: I	cs	Tes	tCode: SI	M2320B: AI	kalinity			
Client ID:	LCSW	Batch ID: F	R53305	R	RunNo: 5	3305				
Prep Date:		Analysis Date:	8/8/2018	S	SeqNo: 17	754672	Units: mg/L	CaCO3		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	y (as CaCO3)	77.72 20.0	0 80.00	0	97.2	90	110			
Sample ID	mb-2 alk	SampType: r	nblk	Tes	tCode: SI	M2320B: AI	kalinity			
Client ID:	PBW	Batch ID: F	R53305	R	RunNo: 5:	3305				
Prep Date:		Analysis Date:	8/8/2018	S	SeqNo: 17	754695	Units: <b>mg/L</b>	CaCO3		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	y (as CaCO3)	ND 20.0	0							
Sample ID	lcs-2 alk	SampType: I	cs	Tes	tCode: SI	M2320B: AI	kalinity			
Sample ID Client ID:	lcs-2 alk LCSW	SampType: I Batch ID: F	cs R53305	Tes <sup>.</sup> R	tCode: SI RunNo: 5:	M2320B: AI 3305	kalinity			
Sample ID Client ID: Prep Date:	lcs-2 alk LCSW	SampType: I Batch ID: F Analysis Date:	cs R53305 8/8/2018	Tes R S	tCode: <b>SI</b> RunNo: <b>5:</b> SeqNo: <b>1</b> 7	M2320B: AI 3305 754696	<b>kalinity</b> Units: <b>mg/L</b>	. CaCO3		
Sample ID Client ID: Prep Date: Analyte	lcs-2 alk LCSW	SampType: I Batch ID: F Analysis Date: Result PQL	cs 853305 8/8/2018 _ SPK value	Tes R S SPK Ref Val	tCode: <b>SI</b> RunNo: <b>5</b> SeqNo: <b>1</b> %REC	M2320B: AI 3305 754696 LowLimit	<b>kalinity</b> Units: <b>mg/L</b> HighLimit	- <b>CaCO3</b> %RPD	RPDLimit	Qual

#### **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
- PQL Practical Quanitative Limit
- 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

Page 52 of 52

HALL ENVIR ANAL LABO	RONMENTAL Ysis Ratory	Hall Environmental Albı TEL: 505-345-3975 Website: www.ha	Analysis La 4901 Ha uquerque, N FAX: 505 illenvironma	aboratory wkins NE IM 87109 345-4107 ental.com	San	nple Log-In C	Check List	
Client Name:	ANDEAVOR BLOOMFIEL	Work Order Number	1808248	1		ReptNo	: 1	
Received By:	Erin Melendrez	8/4/2018 10:15:00 AM		Ń	M			
Completed By: Reviewed By:	Anne Thome SAB 08/06	8/6/2018 7:41:57 AM		Ű	m In	~		
Labelil	by palacin	70						
Chain of Cus	tody	10						
1. Is Chain of C	ustody complete?		Yes 🗹	٢	No 🗆	Not Present		
2. How was the	sample delivered?		<u>Courier</u>					
<u>Log In</u> 3. Was an atten	npt made to cool the sample:	\$?	Yes 🗹	N	4o 🗆	na 🗆		
4. Were all sam	ples received at a temperatu	re of >0°C to 6.0°C	Yes 🗹	Ν	lo 🗌	na 🗆		
5. Sample(s) in	proper container(s)?		Yes 🗹	N	lo 🗌			
6 Sufficient sam	nole volume for indicated test	t(s)?	Yes 🔽	N	o 🗌			
7. Are samples (	except VOA and ONG) prop	erly preserved?	Yes 🔽	N	o 🗌			
8. Was preserva	tive added to bottles?		Yes	N	o 🗹	NA 🗌		
9. VOA vials hav	/e zero headspace?	·	Yes 🗹	N	•	No VOA Vials		
10. Were any san	mple containers received bro	ken?	Yes 🗌	N	lo 🗹	# of preserved		]
11. Does paperwo (Note discreps	ork match bottle labels? ancies on chain of custody)		Yes 🗹	N	lo 🗌	bottles checked for pH:	33 >12 unless noted)	
12. Are matrices of	correctly identified on Chain o	of Custody?	Yes 🗹	N	• 🗆	Adjusted?	NO	
13. Is it clear what	t analyses were requested?		Yes 🗹	N	o 🗌			
14. Were all holdin (If no, notify cu	ng times able to be met? ustomer for authorization.)		Yes 🗹	N	o 🗆	Checked by:	10 8.6.18	
Special Handl	ling (if applicable)							
15. Was client no	otified of all discrepancies wit	h this order?	Yes 🗌	N	lo 🗌	NA 🗹	_	
Person	Notified:	Date	****					
By Who	m:	Via:	eMail [	_ Phone	🗌 Fax	In Person		
Regardi	ing:							
Client Ir	nstructions:							
16. Additional rea	marks:							
CUSTO	DOY SEALS INTACT ON ALL	SAMPLE BOTTLES/at 8/6	5/18 🔇	Per T	1	2 jobs in	IRPT	)a(
17. <u>Cooler Infor</u>	<u>mation</u>						1-11 P	9-0 1
Cooler No	Temp °C Condition	Seal Intact Seal No S	eal Date	Signe	d By		Of LOC'	ر
2	4.0 Good Y 4.4 Good Y	es 'es	****			c	A ARI	Nalls
3	1.1 Good Y	'es					TT UST	
50 (000 million 100 million 10		*****			****************	**		

Page 1 of 2



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:	ANDEAVOF	R BLOOMFIE	L V	Nork Order Number: 1808248	RcptNo: 1
Cooler No	Temp °C	Condition	Seal In	tact Seal No Seal Date Signed By	
4	0.8	Good	Yes		

							Viinil	) 	<b>∆</b>	uə	General Ch					 	×						Analytes.	
		5	ğ	2			sue	oin/	<b>√</b> - '	uə 	General Ch		<b> </b>			<u>×</u>	×	<u> </u>	-				get /	-
			871	107					<u>ام</u>						×			-			-	$\left  \right $	Tar	٩ •
		con	NN	345-4	est	اکر ا	uo 381	LMI'X		8 (V	OA) 80928	×				-		+				+	and	
Ć	¥ ]	lenta		505-3	sequ	s	5 PCB	280	8/8	səbi	8081 Pestic											+	spo	<u>ک</u>
		ironn		Xe	sis F	(1	*0S'*0	d,sC	۵N'۶	ON'	D,7) snoinA												Aeth L'C	5
Ũ	īΣ	llenv	AlA -		\naly			otal	Τ s	slate	ым 8 Аяря			×									Sal N Sal N	Ξü E
-		w.ha	ШZ	3975			(SV	VISC	0229	8 10	0168) HA9												Miles C	S S
		3	/kins	345-				()	04	g po	EDB (Wetho										_		Ĕ¢ ₹	
			Hav	505-		(		יוי חע	- 81 18 -	າ א ש										+	_	+	8 <u>7</u> =	Ĵ,
			4901	Tel		()	Ajuo se	201 201	-141	,+⊒9											_	+		
							(1208	s,s(		+3												┼━╌┤	Sold and a second secon	33
											o De	19	<u></u>	ĩ,	102	19	ĨČ (						70 Å	j ₽
		River	ଷ			ains		4	N L	wheel and	неал и 18082 ц		102	12										Date Ti
lime:	□ Rush_	San Juan	8-2-1	nual Event	266	Jer: Allen Ha		Tracy Payn	X Yes [	erature: Se	Preservative Type	НСІ	Neat	HNO <sub>3</sub>	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	Neat						Nett	COUNSE
Turn-Around 1	X Standard	Project Name:	Date:	Project #: An	PO# 12623;	Project Manac		Sampler:	On Ice:	Sample Temp	Container Type and #	40ml VOA-5	250 ml amber-1	250 ml plastic-1	125 ml plastic-1	125 ml plastic-1	500 ml plastic-1						Regeived by:	Received by:
ecord	erminal			413		eavor.com	ll Validation)	(			equest ID	ream												/
istody R	loomfield T		t 4990	field, NM 87	4-1483	.Hains@And	X Level 4 (Fi				Sample R	Upst											۔ ال	by:
-of-Cu	avor - B	:	s: 50 CF	Bloom	915-53	Allen.S			EXCEL		Matrix	H <sub>2</sub> O											Relinquish	Ketinquish
hain	Ande		Addres		   	ır Fax#;	Package Ndard	J	(Type)		Time	1445												Time:
	ent:		iling		lone	nail c	4∕QC Star	Otp	EDC		Date	2/18				L	┝						B B	ب مريقا

. (1		5							(N	or 1	۲)	Air Bubbles	/							$\square$		es.		
귀	2	2						វរាមខេត្ត		/ - ·I	แอเ	າວ ເຮາອກອບ						×		+		alyu	d.	
ا بر	ļ							suc	vinA	/ - 1	məi	Ceneral Cl					×	×	+	┢╌┼		t An	Ň	,
ں اب	l	i \$		109						sls:	təM	bevlossiQ	t			×				+		lige	Ĩ	
N	2	Ō	E	M 87.	4107					(∀(	-۸C	imə2) 0728							+	╞╌╋	<u> </u>	0	L MI	
	Q		al.co	رم م	345-	lest	λļu	TBE or	M,X	ΞTE	3 (A	8260B (VO	×						+	$\square$			Lí Lí	j .
	0 	( _]   	nent	erqu	505-	Requ	s	2 PCB	808	}/s	əpi	oitee¶ 1808	2									897 897	- V	
	2		ironr	nbno	Fax .	/sis	(*	05'*00	1, <u>s</u> O	N' <sup>e</sup> (	ON'I	D,∃) anoinA	'									Veu )= <		}
	li	Ϊ×	llenv	- Alt		\nal		I	eto	L S	lete	ым 8 Аяря			×							E F S	259	
		Ī	w.ha	ШZ	3975	1		(SN	1150	228	3 10	0168) HA9	<u> </u>							$\downarrow$			2 0 V	
	9 I		Ŵ	kins	345.				(1.	<b>Þ</b> 09	g po	EDB (Metho							_	$\vdash$		ΞΥ ι ∀U Γ		
				Haw	505-2		1-	<u>,</u>	()	81	* po	PH (Method	•						+	$\vdash$	-	ង្វីភ្នំភ្ន		1
				901	Tel.5			AM\0	-/DF	OR N	9) (	12108 Hd1	<b>×</b>	<b>×</b>					_	┝─┤		۲. ۲۲:	いていて	
				4	•		(/		9/H		.+38	BTEX+MTE								+		Senal Senal	388	
[		1			<u> </u>			11008	פי <sub>פו</sub> ד		,+ <u>-</u> 1	TM+X3T8		N						+	<u> </u>	<u>r</u> Ο (	<u>ر</u>	
												N X	222	4	12	202	202	202			Time	(700	Time ∭5	
			ŧ.								10172	EAL										رمي ر	° X	2
			livel	I			su			2 Z		Ξ									2	\$3	Dat 2/LU	
		ي	an R	ବ୍ୟ	'nt		Hai		VNe		0	e X	Į 							+		4		
		Rus	Jué	2	Eve eve		llen		v Pa		 0	rvativ pe	5	eat	ő	စ်	04 0	eat				Jac	い記	
	íme:		San	60	Inal	99	er: A		rac	۲e.	eratur	Prese Ty	T	ž	Ŧ	Ŧ	H <sub>2</sub>	Ž				14	200	
	T bu	ard	ame:	1	Anr	3232	anag				emp	 5,#	7-5		<u> </u>	_				$\square$		the	h	
	Arou	tanda	ct Nã		ct #	126	ŭ U			6	le T	itaine e and	107	ber.	0 ml	5 ml stic-	5 ml stic-	0 ml stic-			A PC	er m	ed by	Į
	-un-	X ∑	Proje	Date:	<sup>r</sup> oje	#0c	<sup>r</sup> oje		Samp		Samp	Type Type	10ml	25 am	25 pla:	12 pla:	12 pla:	50 pla:			None			
L						Γ	ľ	â	<u>, , , , , , , , , , , , , , , , , , , </u>			0										-	~~~	ſ
	p	lal					L.COI	datio				ist I[	#45											Ì
	<u></u>	rmir			113		avoi	Valj				sdne	M										4	
	Re	Te			874		nde	(Full	<b>.</b>			e Re	of										Je l	
	5	field			ΣZ	ŝ	@4	/e  4				mple	l t										2	ò
	ğ	mo		)66t	eld,	-148	ains	Lev				Sai	Ž								i.	\$AM	by: t	
	Sus	Blo		R R	, mfi	534-	S.H	×		Ш		.×								╉─┤			Ished	5
	신	- I		50 (	300	15-	Vllen			EXC		Matr	H <sub>2</sub> C	<u> </u>				┝			- lingu			Þ
	ž	leav		ess:	"	႞ိ	#: -	ge:		e)		<u>v</u>	2					ł ł		$\left\{ - \right\}$		<u> </u>		1
	hai	And		Addr		۳	Fax	acka Jard	- L	<sub>Y</sub>		Tim	<u> </u>					┝					Time:	,
	ប	ent:		lling /		ne #	ail or	QC P Stanc	Other	DO		ate	2 8 2 8							$\uparrow \uparrow$		<u></u>		2
		.∭		Mai		ਜੋ	em	∛ □		×		ŏ	8									No.		Ì

-	I								г							n	0	لەر الەر	$\mathbf{H}$	
さ	ain	-j-j-j	ustod	y Reco	2	Turn-Around	Time:				T	ALI		N	RO	Z		Ę		
Client: /	Andea	Ivor - B	<b>3</b> loomfi	eld Termi	nal	X Standard	□ Rush				4	N	S S	S	P	. Ö	5	<u>0</u>	2	
						Project Name	e: San Juan	River			5	ww.ha	llenvir	onme	ntal.cc	E				
Mailing A	vddress	50 CI	R 4990			Date:	•   •   •			4901 F	ławkir	s NE	- Albı	Iduero	lue, N	M 87	109			
		Bloon	nfield, N	<b>VM 87413</b>		Project #: Ar	nual Event			Tel. 5	05-34{	3975	Ш	ax 50	5-345	410	~			
Phone #:		915-53	34-1483	~		PO# 12623	3266						Analys	is Re	quest					
email or	Fax#:	Allen.S	S.Hains(	@Andeavo	r.com	Project Mana	Iger: Allen H	lains		( <b>0</b> ) ()				S,8 (*(	Λļu		-			
QAQC P	ackage:		;	Ļ	:				(120	AM/C		(SI			o 38			vtinil		
U Stand	ard		X Leve	el 4 (Full Vall	dation)				8)s	אמ פס,	(	NIS (	laj	280 04' <sup>2</sup>	TM,			ika Ino		(
□ Other					1	Sampler:	Tracy Pay	ne	NB <sup>,</sup>	<b>Э/О</b>	۶.1	ע"ו 1.50	оТ	ои, 18 1	X∃.	()	s	A -		(N 1
X EDD (	l ype) _	EXCE				On Ice:	M Yes	 	上+3  上+3	ชย) + 1	141	08 t 28 1	sls	<sup>c</sup> OV 291	18 (	/0/	etə			아
						sample lem	perature: S	-below	8E	) 9 39	ροι		jəl	1,IC	VC	∖-ir	M I	əų: au		) s
Date	Time	Matrix	Sam	ıple Requ€	est ID	Container Type and #	Preservative Type	НЕАL NO. 1808248	TM+X3T8		rtPH (Meth	EDB (Meth PAH (8310	N 8 AADA	),∃) 2noinA t2aG 1808	8260B (VC	n92) 0728	bevlossiQ	J Istanau J Istanau General C		Air Bubble
8/18	635	H <sub>2</sub> O	Ñ	irth of MW	#46	40ml VOA-5	HCI	202		×					X					
						250 ml amber-1	Neat	202		×										
						250 ml plastic-1	HNO <sub>3</sub>	592-					×							
						125 ml plastic-1	HNO <sub>3</sub>	672									x			
						125 ml plastic-1	H <sub>2</sub> SO <sub>4</sub>	Son	•									×		
						500 ml plastic-1	Neat	572										××		
													_							
																_				
										+		_			_					
T										+				<u> </u>				-		
																		-		T
Date: B/3/16	Time:	Relinquis				Received by:	1, 10, 1,	Date Time 8/3/15 1700	j <u>j</u> g	E S F S S S	e S S S S S S S S S S S S S S S S S S S	- Off	cal N S(CF)	i Cho	ds ar	ז br	arge	t Ané	alytes	, ii
Date: 7	lime:	Relinquis	hed by:			Received by:	COULTEEL	No NINE	3332	202	5		$f_{i}$	-, [0] 0 J 	ي ۲۰۰	1	đ	ווים		
12115	1810		MET	<u>}</u>		ン ア )		<u>401 911210</u>		j		j 1	ţ		ڒ	Σ 2	3	1		7

															/~	$\mathcal{I}$		4	
Cha	Ľ	n-f-Cu	istody R	ecord	Turn-Around 7	Time:				I		Ľ	2		Z		E	2	
Client: Ant	deav	or - Bl	oomfield T	erminal	X Standard	□ Rush_				2	Į	Š	SI	23	e Og	2	;	۲,	
					Project Name:	: San Juan	ı River			3	ww.h	allenvii	onme	ntal.c	шo				
Mailing Add	ress:	50 CR	4990		Date:	8-2-	18		1 1 0 6 H	lawkin	s NE	- Albı	rquer	dne, h	1Ň 87	109			
	<b>–</b>	3loom	field, NM 8	7413	Project #: An	nual Event			Tel. 5(	05-346	-3975	Ľ.	ax 5(	5-34	5-410	7			
Phone #:	0	<b>)15-53</b>	4-1483	1	PO# 12623	266						Analys	is Re	sənbə	t				
email or Fay	₩ 	Allen.S.	Hains@Anc	deavor.com	Project Manaç	ger: Allen H	lains		(O)				(†	uرک د					
QA/QC Pack	age:							(12	MR MR		(9	<i>,</i>	05"				vtin Vtin	(a	
Standard	_		X Level 4 (Fi	ull Validation)				08);	RO 800		SMI	le	0d				noi		
□ Other					Sampler:	<b>Tracy Payı</b>	ne	2,81 2)4		(1)	S02	ĵ0⊺	10 <sup>3</sup>	V'XE	1	5	uA nA		(N
X EDD (Typ	) ()	EXCEL			On Ice:	d Yes	🗋 No	NT.	אכ אכ	811	FU8	S	V' <sup>®</sup> C	816	(AC	slej	- 't		10
					Sample Temp	berature: S	ie below	9E+	9) <b>8</b>	- pc		ste	DN'I		) <b>∧</b> -!	эW	มอเ		Y) (
Date	ne	Matrix	Sample F	Request ID	Container Type and #	Preservative Type	HEAL No.	TEX+MTE	PH 8015E	PH (Metho	0158) HA	M 8 AAD	0,7) znoin.		məS) 072	pavlossi	10 Isrenei		ir Bubbles
8/2/1A 17.	8	H <sub>2</sub> O	Down	stream	40ml VOA-5	HCI	1000 - M		T ×	L		4	<	8 ×	8		9 9		A
					250 ml amber-1	Neat	402-		×										
					250 ml plastic-1	HNO3	402-					×							
					125 ml plastic-1	HNO3	taz									×			
					125 ml plastic-1	H₂SO₄	h02										×		
					500 ml plastic-1	Neat	192-										××		
														>					
- 81/2/2		HzO	TRIPBL	ACK	3 VOA	HCI	C07				+		+	4			_		
											+			_					
	-	_											_						
Date: Time	<u>8</u>	Kelinquish			Received by:	1 NOVE	Date Time 8/3/18 1700	COO	S S S S S S S S S S S S S S S S S S S	₹ G A D	- O.3	(Cf):	letho ניי.(	ds a	T pu	arge	t An	alytes	
Bate: Time 8/2/16/18	. 9	Refine the second se	ed by:	0 10	Received by:	COUNIS ENH SEUN	C Date Time	<u>3</u> 32	200	5				ٹا محت		ひて	ANG.		
	*		JAN W-V		<u>ا</u>	•		j	Ī		2	j	; ן		5	Ę	2		1

	I		_						(	A 10	) )	Air Bubbles							T		s,	
4		12					7 7			27117	<b>-</b>								-		alyte	
н			)						suc	piut	, 7 - ·	med0 .ne0			 		×	×		-	tt An	
1-			•	109	222. 2					sje	19M	l bevlossiQ				×			+	┢	arge 48	
5		Ō	E	M 87	410					(A	0/-	imə2) 0728							<u> </u>			
	Č		tal.co	N N	-345	luest					(∀	OV) 80928	×								san . d	
		ני	men	neral	505	Red	S	5 bCB	280	3/5	ebi:	oitee9 1808			 						0-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	
	ź	Ś	viror	Ipnal	Fax	lysis	(>	05'*0	d' <sup>z</sup> C	°N <sup>°E</sup>	ONʻI	D,7) anoinA	ļ						+	-	₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩	
	<u> </u>	<u>ק</u> י	aller	4	ں ب	Ana		(9)	neto Isto		o iu elete				×				_	_	Sec. 3	
		Ż	WW.	IS NE	5-397				1)	.40	g po	EDB (Metho							+	-		
	1	2	5	awkir	5-34				()	.81	₽ po	TPH (Metho							+	+		
		] [		о Н	il. 50		(0	AM\0	שם	юЯ	อ)	88108 H9T	×	×	<u> </u>				╈		N. H. N. H. J.	
				49(	Ţ		۸)	uo se	9) I	ЧЧТ	.+∃	втех+мтв									E C C C S S	
					1			(1208	)s,e	IMT	.+38	BTEX+MTE									<u>F3333</u>	
													2	0/0	102	20	<u>_</u>	<u>.</u> -9				
											3	D No.	1	6		12	4	4				
											1	HEAI 08									ate 3/15 4/19	
			lls				ains		e	Z Z	3	18			-						8	
		ush_	We	ļ	vent		Hu				S	tive				m	4				4/28	
	8		CRA	<u>ا</u> ،	ш а	6	Alle			es	ture:	serva Type	HCI	Neat	l ₽	N N	l₂SC	Neat			a Jan	
	Ξ	ļ	e: <b>R</b>		nuu	326(	ager:		Tra	8	pera	Pre				-	*	_				
	puno	ndarc	Nam		# A	262	Mana				Tem	iner nd #	0A-5	Ξž	트 간	년 년	두 구	년 년				
	rn-Ar	Star	oject	ite:	oject	#7	oject		mple	- <mark>  2</mark>	mple	conta /pe a	ml V	250 - Imbe	250 I lasti	125 I Iasti	125 I Iasti	500 I Iasti			Part of the	
		×	P		Ā	Ă			Sa	δ	Sa	04	40						_		A Charles	
	T	le					E C	tion)		1		t D										
	or	nina			<u>.</u>		VOT.	/alide				lues	8									
	Sec	Teri			8741		Idea					Req	W-6								2	
	N	eld			M	6	₿ ₽	14 (I				ple	Σ									
	tod	Dufi		990	ld, l	148	ains(	Leve				Sam			:						× 1 × 12	
	sn	Bloc		X 4	mfie	34	H S	×	1			×										
	5 C	or -		50 0		15-5	llen.			EXCI		Matrij	H <sub>2</sub> O									
		eav		SSS:		െ	▲	je		(i)			0			<b></b>			 	-		$\rightarrow$
	hai	And		Addre		<u>.</u> .	Fax#	acka( Iard		<sub>M</sub>		Ţ	083					>			Time: 176 Time: (8/0	
	บ	snt:		iling /		one #	ailor	QC P Stanc	Other	DD		ate	48									
		∐		Ma		<del>Ĕ</del>	E E	8 D		×		ŏ	<u>8</u> 3,								B at B	

11			Ż				2	028	-Viin	(N)		(۲) ۲-۰	aen. Chem Vir Bubbles	/							×			alvtes		:	
ог.				.=	_				SI	ioi	uA	' - 'I	mədə .nə£	<b>i</b>		╡			<u> </u>	×	×	+	+	, ₽	÷		
6	L S			7100		5				S	slei	юМ	bevlossi	ז					×	<u> </u>					, ה ז	~	
						t t				(	AC	) <b>∧-</b> !	im92) 0728	3			×		-						2	SVIII SVIII	
		2 ₹				sent						(∀	OV) 80928	8 ×										] a s	; <del>1</del>	τῦ 1	
	Ę	lu				s Rec		SCB's	1 28		/ Si	əbic	S081 Pestic	3	Ļ	1			<u> </u>	 					-e.	<u>, -</u> 0	
	Ź					lysis		(°OS'*	'0d'		1 <sup>°E</sup> C	DN'I		/	<b> </b>									Net Net	)」 して		I
	Ц	┙┝		• 4	بر	Ana		(c	-iet	oT oT	S ZO	ete				-		×_							$\tilde{\mathfrak{g}}_{\tilde{s}}$		
				E N S	795-				50012 (		-68 -00	10				_					<u> </u>				i S V		
	I		3	wkin :	-345				(	1.5	215	, po				╀								- A	J.	120	
		_		L Ha	505		((	אאכ	ЮЪ	]/C	)ਮ (	<u>ه (ح</u>	16H 8019E		×	+					<u> </u>	$\left  \right $		- S	י <u>ר</u> י היי	,	
	<b>.</b>			490	E Le		١u	o see	<u></u> Э) Н	ЧТ	+	38:	rm + xəta			╉								;		です	
							()	208)	s'al	٧L	+ 3	18E	rm + X∃⊺8		<u> </u>	╉		<u> </u>					-	lema	3Ē	<u>i</u> ğ 8	
Γ														5	5	Ţ	1	₩		15	7			1		<u>00</u>	
		Ę	Vells		nt		Hains			yne	0N D	Seebelow	HEAL NO.	202	Î Î		2	A-OSlein TOT Z	24	2	9			Date Time	12 8/3/15 170(	IAS Date Time	
-	Time:	□ Rus	e: RCRA W		nual Ever	3266	aer: Allen	)	ľ	насу на	<b>M</b> -Yes	perature:	Preservative Type	НСІ	Neat	;	Neat	HNO3	HNO3	H <sub>2</sub> SO <sub>4</sub>	Neat				Jal	Course	1
	Turn-Around	X Standard	Project Name	Date:	Project #: AI	PO# 1262:	Project Mana	,		oarripier	On Ice:	Sample Tem	Container Type and #	40ml VOA-5	250 ml amher-1		amber-≸2	250 ml plastic-1	125 ml plastic-1	125 ml plastic-1	500 ml plastic-1			Received by:	Mush	Received by:	
-	stody kecord	oomfield Terminal		4990	field, NM 87413	4-1483	Hains@Andeavor.com		X Level 4 (Full Validation)				Sample Request ID	MW-51										l by:	1	ay. A walt	
	n)-10-	avor - Bl		s: 50 CR	Bloom	915-534	Allen.S.				EXCEL		Matrix	H <sub>2</sub> 0										Relinquished	¥		$\supset$
	nain	Ande		Addres		#:	r Fax#:	Package:	dard		(i type).		Time	0940										Time:	1700	1810 ×	
Ç	וכ	Client:		Mailing		Phone	email o	QAQC			A EUU		Date	8/3/8										Date:	81/ch	S S S B R	

									(	N JO	) 1)	sə		r						 	ب م		1
		. ≻								11 -	~~~	50	1997ya *: V									) -	
7	3	Ř					<sup>2</sup> 0	) S&C	inil	eyl.	<b>∀</b> - '	าเมอ	იფე .naච						×		naly J'î	i. r	
Ъ	Z	ĔĔ							su	oin	√ - '	·wə	Gen. Ch					×	×		v st⊿	) 	
		2		109	2					sje	i eta	v p	eviossiQ				×				arg(	ノ う 型	
	2 Z	ΞŌ	E	M 87	410					(∀	ΟΛ	-im:	92) 0728								]⊢ {	擂	
	Q		tal.cc	e S	-345	uest					()	10/	/) 80928	×							an Contraction	<u>ب</u> "	
		<u>لے</u> :	ment	erqu	505	Req	s,	ьсв	280	8 / '	səpi	ioite	eq 1808									r —	
	2		viron	nbnc	Fax	/sis	(*	05'*0	)d' <sup>z</sup> (	DN"	ON	'IO':	9) snoinA								₩ ₩ E	EE	İ
	Π	i 🎽	llen	- All		Anal∖			lsto	у .	slet	.əM	8 АЯЭЯ			×						ù Ņ	
		A	w.ha	Ш Z	3975	1		(SI	NIS	022	8 10	01	PAH (83							 	) <u>صح</u> اً _	20	
		Z	Ŵ	kins	345-0				()		g p	oy	EDB (We								_\₹ <u>σ</u> .'		
				Hawl	05-3		_		(	1.81	44	оц	əM) H9T								L Sel	3.0	
				9011	el. 5		() ((	AM\(	אכ	105	ເອ)	89	108 HqT	×	×					$\square$	5	le r	
				4	Η		(/)		29) 	Hd.	L+3	BT	M+X3T8								- Dar	28	
r								(120	8)s';	aw.	L+3 T	1	M+X3T8								- <u>"</u> "		
														03	T	S	8	B	X		<b>a</b> 0	ູ່ນ	
												2	N. Po	Ŋ	þ	$\beta$	0	9	ğ			<u>i</u> 19	
												8	IEAL 324									1ª K	}
			s				ins			<u>اع</u>	7		- X 20 1								a v	ן <u>ה</u> אלי	
		اي ا	Vell		ut (		На			Ĭ	ן ע	∛—	<u> </u>	-								U U	1
		Ruŝ	N N	Ì	EX 6		llen			2	نو ا	5	rvativ pe	ច	eat	ő	ő	04 04	eat		V	137	
	me:		RCF		ual	99	¥				ratur		Ty	Ť	ž	Ŧ	Ŧ	H <sub>2</sub>	ž			10	*
	ld Ti	Ð	ne: I	1	<b>V</b> nn	232	nage		ŀ	-   Þ	¶ agu	<u>}</u>	<u> </u>	Ş							- F		
	rour	Inda	t Nai		t #:	126	t Ma		i		e Te	2	ainei and	Vo Vo	er-1	tic-1	ti al	ti m	ti al		A by:		1
	trn-A	t Sta	ojeci	ate:	ojec	# 0	ojeci						Cont	l m	250 amb	250 plasi	125 plas	125 plas	500 plas				Į
L		~	٩	<u>ď</u>	<u> </u>	Ē	6		ن ا	δ [ē	5[ഗ് 	<u> </u>	<u> </u>	40						 	B		-
	_	_					mo	:					<u>n</u>									ļ ,	
	20	lina			6		or.c	:	alida				nest									L L	2
	Ö	ern			741		leav						Seq	<u>-6</u>									
	R	БЦ			M 8		And	Į Į	1 1				le F	M									Ì
	ð	nfie		0	Z,	83	)s@	-	evel				amp									I	
	sto	noo		49	ielc	4-14	Haiı		ľ K				СŎ										
	С С	B		CR	l Te	23	n.S.						trix	0							副を	uishe V	
	÷	vor		20	B	915	Alle						Ma	Τ							Kelin		$\square$
	Ŀ.	dea		ress:			#	age:	_	1	Ì		Je	S							<u>م</u> ي	2	Γ
	ha	An		Add		#	r Fay	Pack	laaro	ا کے ا			Ë.	1							Time 17e		<u>.</u>
	ပ	ent:		tiling		one	ail o	/oc	Star		) ) ]		ate	3/2								ie.	
		: Ū		Ma		ተ	eu	Ø		<b>&gt;</b>	(			8/							1 <u>8</u> 8		T

0 11 - 0		SIS LABORATORY		Vburuerrue NM 87109	Ear 505-345-4107	lusis Request	 		082 082 085	3, N( 3, 1 8 A) A) A) A) A) A) A) A) A) A) A) A) A)	OV, (/ bigger (/ CV) () () () () () () () () () () () () ()	rions (F,Cl 10,2 (Semi- 2008 (VO) 200 (Semi- 200 (Semi-	<ul> <li>₩</li> /ul>	×			×	×	XX	X	Mothode and Torret And dec	Wellious and Target Analytes.	4,24 COOIECU 11.1-0.5-0.5	
				4901 Hawkins NE - A	Tel 505-345-3975	Ane Ane Ane Ane Ane	(0) (/	(SV) <b>3</b> 8 onli (8021)		18. 04. 18. 04.	01 8 01 8 01 8	TEX+MTE PH 8015B PH 8015B PH (8310 PH (8310 PH (8310		<	X	×					Computer Sec Analytical	Dery: 4, 9-0, 3=4	2001er 3: 1, 7-0:3= 0 2001er 3: 1, 4-0,33=	
		ų	Vells		nt		Hains		vne	□ No	ecbedow	HEAL No.	1200241	102	-209	602	602	602	602	 910	Date Time	1 8/18 (700 0	Sel/IS (NIS C	
	Turn-Around Time:	X Standard D Rus	Project Name: RCRA V	Date:	Project #: Annual Eve	PO# 12623266	Project Manager: Allen		Sampler. Tracy Pa	On Ice: M Yes	Sample Temperature: S	Container Preservative Type and # Type	40ml VOA-5 HCI		<sup>250 ml</sup> Neat	250 ml HNO <sub>3</sub>	125 ml HNO <sub>3</sub> plastic-1	125 ml H <sub>2</sub> SO <sub>4</sub>	500 ml Neat	40 ML VOA-3 HCI	Regeived by:	Anste Walt	Received by: ODUN	
	<b>Custody Record</b>	- Bloomfield Terminal		CR 4990	omfield, NM 87413	i-534-1483	en.S.Hains@Andeavor.com	X Level 4 (Full Validation)		CEL		trix Sample Request ID	0 MW-53							0 TRIPBLANK	l juished by:	T LA	Mished by (	
	Chain-of-	Client: Andeavor		Mailing Address: 50	Blo	Phone #: 915	email or Fax#: Alle	QA/QC Package:	□ Other	X EDD (Type) EXI		Date Time Mat	842 17 30 H							 8/3/18 - H <sub>2</sub> (	Date: Time: Relinq	8/3/18  700 <	Date: Time: Reing 8/3/18 1810 CM	)

٤ĺ		~								(Ñ	or	Y)	Air Bubbles	1						1	T		T	20 20 20 20 20 20 20 20 20 20 20 20 20 2	
エエ	A	2					z	<u></u>		111.00	VI-			_	+	<u> </u>			<u> </u>				+-	<sup>™</sup> \`	G.
۔ لیا	Ē	2					_	0.0.81	c viir	ano. Tile	<u>⊿I</u> k	· - ·	Gen. Chem	<u>}</u>			<u> </u>	-				_	_	And And And And And And And And And And	S S
0		5		g	3						2101			<u> </u>		<u> </u>			×			_		det	
0	Σ	RO	_	871	104	2						) • • •			<u> </u>			×			_				
I	Z	ğ	Loo.	N N	15.4	st t						- الا	(OA) G0020			<u>×</u>	-				+			Q a	ф Л
	X	2	ental	allo	945.2 05.2	e co			1 70	000	/ 50	eni					┿──		<u> </u>	-			–	ရီ ရွိ ရွိ	羽
	5	N	- Mu	duer		5 8 5 8		(*		1000	, U'EC	יואר		,		-					+	_	-	, u	Ŋ.
		S	nvirc	Albu	ц	alvsi				2101	s c			-								_	+		5    _
		Ţ.	halle	1	ביים	Ani		(s		50.		2 10							<u> </u>			_			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
			WW.	s NE	000					(1.4	500	; 10									+	+	+		
	Ĩ		3	wkin	-345					(1.9	RL to 1	7 100	- н- н (INIetuc				-	<u> </u>			+	+		ダダ	- 5
				і На	505	ß	(		ักษ		ייי אר	<u></u>									╋			New Sec	
				4901	T T T		(/		ະຄ			+=19		╞╴		_		-		+	+		_		N'N L
·				•				(120	<u>- ບ</u> ງ <u>ຊ)</u>	5.91		+==				ļ —					+				3 Å
Γ		1			Ţ -		-		1					2.92							+				58
													- ~-	勢	ã	3	5	n N	3		5			8	ų ا
				•								3	L N L	£7	1	12	12	,	1-	1 (					
												5	HEAI											e S	
			S				ins				S	da	+ 8	1 <sup>1</sup>	þ									a Ta	en C C
	<u>.</u>	_   ह ;	We		ă,		Ha			Ň	L.I.	n N						_				_	+		17
	Ō		2		<b>—</b>		llen			ň		e.	rvativ pe	ច	at	at	ő	ő	04	at				- Si	
E		ן י ו	RC		ual	99	N US			rac	×ä	ratur	resei Ty	Ť	Ne	Ne	H	I	H <sub>2</sub> S	ž				3	3\$
-   -   -	- 2 2	2	це:	I	Ann	232	nage	I		F	R	mpe		ų							-		-		Sh
			t Na		t #:	126	t Ma			ы.		e Te	ainer and #	VO VO	ml er-1	ter er-1	ml ic-1	n i	<u>e</u> <u>-</u>	Ξ.	5			ă tr	f
	ť		ojeci	ate:	oject	#0	ojeci			du	<u>e</u>	du	conta /pe a	Ĩ	250 imbe	1 lit Imbe	250 last	125 last	125 last	500				eived	ך ייי
	<u>·</u> ×		<u>م</u> ۲	Ď	ă	<u>ă</u>	١	г		ß	<u>5</u>	Sa		40	a 	a	d		<u> </u>	<b>1</b> "	2				<u>EN</u>
_	_ _						E		(uoj				₽												-
	inal 1				_		J.C		lidat				est												D
	<u> </u>				413		3avc		II <a< td=""><td></td><td></td><td></td><td>nbe</td><td>-29</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td></a<>				nbe	-29											0
Å	<u>ן</u> א				187		<b>b</b> nde	[	Ľ Ľ				а М	Š						<b> </b> ,					C M
20					NN	n 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	) 0		<u>6</u> 4				hdn									Í			2
Ť.				1661	эld,	148	ains	-	Гe				Sai											×1 ×	; A
				Ř	mfi	34-	S.H		×		<u> </u>	╞		-							_		┝╌┤		14.0
Ę C	<u>-</u>			000	00	15-5	len.				XC:		latri)												μn Υ
<u>o</u>				;;;	Ô	ò	A					╞	2	-		}						<u> </u>	$\left  \right $		$\leq$
ain	nde			fdres			аХ# ;#Хе	kage	ē		ype)		me	3						<b></b> ,		1			9
ů C	<b>,</b>   <b>4</b>			g Ac		#	ы Б	) Pac	anda	با با		╞									_				/8
-	lient			lailin		hon€	nail	AQC	202	ŧ	Ē		Date	칬										ة الأكرية	de la
	10	I	I	2		٦	ē	ďΓ	_		ĸ			3								ł		5 Ka	0

10 of LL			187109	1107		2 7	S N S N S N	ארת ארת נשר	<u>А</u> А И	(A) 	ম ম ব	-ісемі- еогие и.Сне и.Сне ирыез (	0728 250 136 136 136 13 118 118	2				×	×	××			
	L ENVIRU	hallenvironmental co	- Albuqueraue. NM	5 Eav 505-345-	Analysis Request	(*(	s,8; >S(*	од ′од' <b>76</b> ,	2808 700 <sup>5</sup> 200	28 V, EC	ials (NC () () () () () () () () () () () () ()	n co) c MeM 8 A3 IO, T) cn Pestici AOV) 8(	ПАЧ РОСР 1001 1008 1808 1808 1808 1808 1808 180	×			×					(4) =(4. (6)	(cfr)=(-1, -1)   (cfr)=(-1) ///^ (cfr)
			4901 Hawkins NE	Tel 505-345-397		(O) (A)	WE S OL	60) (05)	(L (L IO / Hd.	T + 18. 18. 18.	9 2 9 7 9 7 9 7 9 7 9 7	17M + X 8015B 0119M) 0119M)		X	X					11		Marks: Oler 1.49-0.30	016531.4-0.3
		verus		VENT	.9	N HAINS		8/ 3	YNE N	- No		HEAL No	<i>₹68248</i>	212	212	212	212	202	202	22		Date Time Re 8/3//6 1700 00	
d Time:	d 🗌 Rush_	IP: RCEA		ANNUAL E	262326	ager: ALLE			TRALY A	<b>XYes</b>	nperature: S	Preservative		7/17	1 NEAT	/ NEAT	1 HNO3	LAND-	14.504	INEAT		inth het	COUNIER ENH SIGNS
Turn-Aroun	X Standar	Project Nan		Project #:	Po#/	Project Man	<del></del>		Sampler:	On Ice:	Sample Ten	Container Tvne and #		HOMLYOR	250 ML	2 L AMBER	PLASTIC-	PLASTE-	25 MC	SCOME PARK		Received by:	Received by:
<b>F-Custody Record</b>	VOR- BLOOMFTELD	JWIN	50 CR 4990	MOONFIELD NMB7413	5-534-1483	LEN. S. HAINS	ANDEAVOR. CON	K Level 4 (Full Validation)	į	Other	KEL	atrix Sample Request ID		2 OFIELD BLANK#1						1		nquished by:	Almont Lange
Chain-of	Client: ANDEA	/ERI	Mailing Address:	Φ	Phone #: $q_{l}$	email or Fax#: Au	QA/QC Package:	Standard	Accreditation		🗶 EDD (Type) 🥒	Date Time Ma		<u>1410 A</u>						× ×		Ale Time: Relit	ate: Time: Relin 3)15 [812

Lesonstrate     Turn-Around Time:       Eleconstrate     Standard     Rush       Project Name:     Z. Ra WELLS       Report     NN B74/JS       Project Name:     Z. Ra WELLS       Report     NN B74/JS       Project Name:     Z. Ra WELLS       Report     NN B74/JS       Project Nameger:     Auxuat.       Election     Project Manager:       Record of the container     Project Manager: <th>HALL ENVIRONMENTAL</th> <th>www.hallenvironmental.com</th> <th>201 Flawkins NE - Albuquerque, NM 87109 el 505-345-3075 - Ecy 505 215 4107</th> <th>Analysis Request</th> <th>()</th> <th>s.g: s.g: OS<sup>*†</sup></th> <th></th> <th></th> <th>095 604 18 18 10 1, 10 1 1 1, 10 1 1 1 1</th> <th>PH 8015B (( PH (Method DB (Method DB (Method AH's (8310 c CRA 8 Meta nions (F,CI,N 2008 (VOA) 2008 /th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>1.4.9-0.3ccn=4.6</th> <th>2.1.4 - 0.5(cr) = 4.4</th>	HALL ENVIRONMENTAL	www.hallenvironmental.com	201 Flawkins NE - Albuquerque, NM 87109 el 505-345-3075 - Ecy 505 215 4107	Analysis Request	()	s.g: s.g: OS <sup>*†</sup>			095 604 18 18 10 1, 10 1 1 1, 10 1 1 1 1	PH 8015B (( PH (Method DB (Method DB (Method AH's (8310 c CRA 8 Meta nions (F,CI,N 2008 (VOA) 2008										1.4.9-0.3ccn=4.6	2.1.4 - 0.5(cr) = 4.4
Ustody Record     Turn-Around Time:       - Buson-Tell     Project Name:     Rush       - Polect Name:     RA WELLS       - Rep370     Project Manager:     ALLEN HAINS       - Rep370     PO # / Ro 232.665     PO # / Ro 232.665       - Revel 4 (Full Valuation)     Sampler:     Revel / Revel       - Robert Annager:     ALLEN HAINS     Mark       - Robert Anglattion)     Sampler:     Revel / Revel       - Robert Anglattion)     Sampler:     Revel / Revel       - Robert Anglattion)     Sampler:     Revel / Revel       - Robert Anglattion)     Sampler:     Revel       - Robert Anglattion)     Sampler:     Revel       - Robert Anglattion     Sampler:     Revel       - Robert Anglattion     Type and #     Type and #       - Robert Ank     Revel     Revel       - Robert Ank     <					(A) (	1208	3) s' 3) s'	Hd. 8W.		18TM + X3T		ζß	13	013	<u>a</u> 3	213	<u> 2</u> (3	1		Remarks	CONE
ustody Record     Turn-Around Time:       - Sicconcrete     XStandard     Russ       - Sicconcrete     Project Name:     Russ       report     Project Manage:     Auruat       Mocrate     Sample:     Report       Profese     Project Manage:     Auruat       Mocrate     Sample:     Report       Profese     Project Manage:     Auruat       Profese     Project Manage:     Auruat       Profese     Profese     Profese       Profese     Profese     Profese       Profese     Profese     Profese		WELLS	EVENT	60	EN HAINS			AVNE		HEAL No	2		~	}-		1	()	2		Date Time	Q 11 110 V
Ustody Record     Turn-Aroun       BLEEDFLED     XStandar       Project Nam       Project Man       Project Man       Mcree       Project Man       Mcree       Project Man       Mcree       Sample Request ID       DuPLICATE       DuPLICATE       Mode       Man       Mode       Man       Mode       Man       Mode       Man       Mode       Man       Mode       Man	d Time: d <b>Rus</b> t	<sup>le:</sup> <i>R L R</i>	ANNUAL	126232	ager: <b>∕///</b> ∕			RACY R		Preservative	HC I	NEAT	NEAT	HNO3	HNO3	HESDY	NEAT	HCL		Warte	COUNCIER BUUR
ustody Record - BueoneterD - BueoneterD - Reporter - 1483 - 1483	Turn-Around	Project Nam	3 Project #:	P0#	Project Man			Sampler:	On Ice: Samila Tam	Container Type and #	40 mL	250 MC	1 C AMBER-1	PLASTIC-1	PASTIC-1	PLASTIC-1	PLASTIC-1	40 MC	) S	Received by:	Received by:
	ustody Record - <u>Breonster</u> D	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	METELD NM 8741	4-1483	S. HAINS@	HNDEANDR. COM	KLevel 4 (Full Validation)	L	EL -	Sample Request ID	DUPLICATE #1						7	TRIP BLANK		ed by:	ad by:
		Mailing		Phone #	email or	QA/QC P			NEDD (	Date	8/2/18	-				$\rightarrow$	>	e/3/16		9/3/18	Date: ⊤ S{3}}

# TABLE 2 Analytical Methods and Target Analytes Facility-Wide Groundwater Monitoring Plan - June 2014 Western Refining Southwest, Inc. - Bloomfield Terminal

VOCs (EPA Method 8260B) (1)	
- Target List	
Benzene	
Toluene	
Ethylbenzene	
Xylenes	
Methyl tert butyl ether (MTRE)	
SVOCs - (EPA Method 8270)	<u>_</u>
- Method List	
TPH-GRO (EPA Method 8015B)	-
- Gasoline Range Organics	
PH-DRO (EPA Method 8015B)	
- Diesel Range Organics	
- Motor Oil Range Organics	
otal Carbon Dioxide (Laboratory Calculated)	
- Dissolved CO2	_
pecific Conductivity (EPA Method 120.1 or field measurer	nent)
- Specific conductance	
DS (EPA Method 160.1 or field measurement)	
- Total dissolved solids	
eneral Chemistry - Anions (EPA Method 300.0)	<u> </u>
Fluoride	
Chloride	
Bromide	
Nitrogen, Nitrite (as N)	
Nitrogen, Nitrate (as N)	
Phosphorous, Orthophosphate (As P)	
Sulfate	
eneral Chemistry - Alkalinity (EPA Method 310.1)	
Alkalinity, Total	—
Carbonate	
Bicarbonate	

Total Recoverable Metals (E)	PA Method 6010B/7470)
<ul> <li>Target List (not applicable to</li> </ul>	River Terrace Sampling Events)
Arsenic	Lead
Barium	Mercury
Cadmium	Selenium
Chromium	Silver
- Target List (for River Terrace	Sampling Events Only)
Lead	1 0
Mercury (DW-1 ON	ILY)
Dissolved Metals (EPA Metho	od 6010B / 7470)
<ul> <li>Target List (for Refinery Con</li> </ul>	plex, Outfalls, and River)
Arsenic	Manganese
Barium	Mercury
Cadmium	Potassium
Calcium	Selenium
Chromium	Silver
Copper	Sodium
Iron	Uranium
Lead	Zinc
Magnesium	

TPH = total petroleum hydrocarbons GRO = gasoline range organics VOCs = volatile organic compounds DRO = diesel range organics TDS = total dissolved solids

#### NOTES:

 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 Piezomenter Wells only, per the River Terrace Bioventing System Monitoring Plan.

Western Refining Southwest, Inc. Bloomfield Terminal



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

September 13, 2018

Allen Hains Andeavor Bloomfield 111 CR 4990 Bloomfield, NM 87413 TEL: (915) 534-1483 FAX

RE: Cross Gradient Wells/Down Gradient Wells

OrderNo.: 1808322

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/7/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0901

Sincerely,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Lab Order **1808322** Date Reported: **9/13/2018** 

CLIENT: Andeavor Bloomfield			Client	t Sampl	e ID: M	W-1		
<b>Project:</b> Cross Gradient Wells/Down Gr	adient We		Coll	lection I	Date: 8/6	5/2018	7:45:00 AM	
Lab ID: 1808322-001	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/7	7/2018	7:00:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm	
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/11/2018 2:13:50 AM	39667
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/11/2018 2:13:50 AM	39667
Surr: DNOP	95.8	0	76.6-135		%Rec	1	8/11/2018 2:13:50 AM	39667
EPA METHOD 300.0: ANIONS							Analyst: JRF	R
Fluoride	0.45	0.030	0.10		mg/L	1	8/8/2018 10:18:12 AM	R53321
Chloride	7.5	0.029	0.50		mg/L	1	8/8/2018 10:18:12 AM	R53321
Bromide	ND	0.027	0.10		mg/L	1	8/8/2018 10:18:12 AM	R53321
Phosphorus, Orthophosphate (As P)	ND	0.093	0.50	Н	mg/L	1	8/8/2018 10:18:12 AM	R53321
Sulfate	68	4.1	10		mg/L	20	8/8/2018 10:30:36 AM	R53321
Nitrate+Nitrite as N	1.1	0.27	1.0		mg/L	5	8/20/2018 5:45:55 PM	R53575
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.000083	0.000037	0.00020	J	mg/L	1	8/23/2018 6:50:32 PM	39964
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.000076	0.000037	0.00020	JFiltere	d mg/L	1	8/23/2018 6:57:24 PM	39964
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: pmf	F
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 2:33:47 PM	A53717
Barium	0.036	0.00049	0.020		mg/L	1	8/20/2018 1:34:52 PM	A53550
Cadmium	ND	0.00088	0.0020		mg/L	1	8/20/2018 1:34:52 PM	A53550
Calcium	90	0.031	1.0		mg/L	1	8/20/2018 1:34:52 PM	A53550
Chromium	ND	0.00081	0.0060		mg/L	1	8/20/2018 1:34:52 PM	A53550
Copper	ND	0.0026	0.0060		mg/L	1	8/20/2018 1:34:52 PM	A53550
Iron	0.030	0.010	0.020		mg/L	1	8/20/2018 1:34:52 PM	A53550
Lead	ND	0.0050	0.0050		mg/L	1	8/20/2018 5:06:20 PM	B53550
Magnesium	19	0.011	1.0		mg/L	1	8/20/2018 1:34:52 PM	A53550
Manganese	0.037	0.00015	0.0020		mg/L	1	8/20/2018 1:34:52 PM	A53550
Potassium	1.9	0.075	1.0		mg/L	1	8/20/2018 1:34:52 PM	A53550
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 2:33:47 PM	A53717
Silver	0.0024	0.0010	0.0050	J	mg/L	1	8/20/2018 1:34:52 PM	A53550
Sodium	57	0.26	1.0		mg/L	1	8/20/2018 1:34:52 PM	A53550
Uranium	ND	0.025	0.10		mg/L	1	8/20/2018 1:34:52 PM	A53550
Zinc	0.15	0.020	0.020		mg/L	1	8/20/2018 1:34:52 PM	A53550
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: pmf	Ŧ
Arsenic	ND	0.011	0.020		mg/L	1	8/13/2018 4:13:24 PM	39664
Barium	0.13	0.020	0.020		mg/L	1	8/13/2018 12:52:53 PI	M 39664
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 12:52:53 PI	M 39664
Chromium	ND	0.0011	0.0060		mg/L	1	8/13/2018 12:52:53 PI	M 39664
Lead	ND	0.0050	0.0050		mg/L	1	8/13/2018 8:17:58 PM	39664

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

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

PQL Practical Quanitative Limit

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 Page 1 of 39

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

Lab Order 1808322

#### Date Reported: 9/13/2018

<b>CLIENT:</b> Andeavor Bloomfield <b>Project:</b> Cross Gradient Wells/Down G <b>Lab ID:</b> 1808322-001	radient We Matrix:	AQUEOUS	Client Colle Rec	Sample ection I ceived I	e ID: M Date: 8/6 Date: 8/7	W-1 5/2018 7/2018	7:45:00 AM 7:00:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed H	Batch ID
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: pmf	
Selenium	ND	0.024	0.050		mg/L	1	8/13/2018 12:52:53 PM	39664
Silver	ND	0.0018	0.0050		mg/L	1	8/13/2018 12:52:53 PM	39664
EPA METHOD 8260B: VOLATILES							Analyst: RAA	
Benzene	ND	0.17	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Toluene	ND	0.17	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Ethylbenzene	ND	0.22	1.0		μg/L	1	8/9/2018 3:37:00 PM	R53334
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		μg/L	1	8/9/2018 3:37:00 PM	R53334
1,2,4-Trimethylbenzene	ND	0.25	1.0		μg/L	1	8/9/2018 3:37:00 PM	R53334
1,3,5-Trimethylbenzene	ND	0.23	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
1,2-Dichloroethane (EDC)	ND	0.40	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
1,2-Dibromoethane (EDB)	ND	0.23	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Naphthalene	0.59	0.29	2.0	J	µg/L	1	8/9/2018 3:37:00 PM	R53334
1-Methylnaphthalene	0.51	0.34	4.0	J	µg/L	1	8/9/2018 3:37:00 PM	R53334
2-Methylnaphthalene	0.75	0.24	4.0	J	µg/L	1	8/9/2018 3:37:00 PM	R53334
Acetone	ND	0.79	10		µg/L	1	8/9/2018 3:37:00 PM	R53334
Bromobenzene	ND	0.32	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Bromodichloromethane	ND	0.28	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Bromoform	ND	0.32	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Bromomethane	ND	0.26	3.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
2-Butanone	ND	1.3	10		µg/L	1	8/9/2018 3:37:00 PM	R53334
Carbon disulfide	ND	0.39	10		µg/L	1	8/9/2018 3:37:00 PM	R53334
Carbon Tetrachloride	ND	0.13	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Chlorobenzene	ND	0.29	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Chloroethane	ND	0.16	2.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Chloroform	ND	0.40	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Chloromethane	ND	0.29	3.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
4-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
cis-1,2-DCE	ND	0.38	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
cis-1,3-Dichloropropene	ND	0.30	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
1,2-Dibromo-3-chloropropane	ND	0.47	2.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Dibromochloromethane	ND	0.24	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Dibromomethane	ND	0.32	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
1,2-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
1,3-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
1,4-Dichlorobenzene	ND	0.40	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Dichlorodifluoromethane	ND	1.0	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
1,1-Dichloroethene	ND	0.12	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 2 of 39
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808322

#### Date Reported: 9/13/2018

CLIENT: Andeavor Bloomfield			Client	Sample	e <b>ID:</b> M	W-1		
Project: Cross Gradient Wells/Down Grad	lient We		Colle	ection I	Date: 8/6	5/2018	7·45·00 AM	
<b>Lob ID:</b> 1909222 001	Motrine	AOUEOUS	Doc	atual T	Date: $0/0$	/2010	7.00.00 AM	
Lao ID: 1808522-001	Matrix:	AQUEUUS	Ket	erveu I	Jale: 0/ /	/2010	7.00.00 AN	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: RA	A
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
1,3-Dichloropropane	ND	0.27	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
2,2-Dichloropropane	ND	0.18	2.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
1,1-Dichloropropene	ND	0.16	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
Hexachlorobutadiene	ND	0.80	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
2-Hexanone	ND	0.91	10		µg/L	1	8/9/2018 3:37:00 PM	R53334
Isopropylbenzene	ND	0.22	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
4-Isopropyltoluene	ND	0.24	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
4-Methyl-2-pentanone	ND	0.45	10		µg/L	1	8/9/2018 3:37:00 PM	R53334
Methylene Chloride	ND	0.21	3.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
n-Butylbenzene	ND	0.25	3.0		μg/L	1	8/9/2018 3:37:00 PM	R53334
n-Propylbenzene	ND	0.24	1.0		μα/L	1	8/9/2018 3:37:00 PM	R53334
sec-Butylbenzene	ND	0.20	1.0		μα/L	1	8/9/2018 3:37:00 PM	R53334
Styrene	ND	0.25	1.0		µg/L	1	8/9/2018 3:37:00 PM	R53334
tert-Butvlbenzene	ND	0.22	1.0		ua/L	1	8/9/2018 3:37:00 PM	R53334
1.1.1.2-Tetrachloroethane	ND	0.25	1.0		ua/L	1	8/9/2018 3:37:00 PM	R53334
1.1.2.2-Tetrachloroethane	ND	0.33	2.0		ua/L	1	8/9/2018 3:37:00 PM	R53334
Tetrachloroethene (PCE)	ND	0.15	1.0		ua/L	1	8/9/2018 3:37:00 PM	R53334
trans-1.2-DCF	ND	0.18	1.0		ua/l	1	8/9/2018 3:37:00 PM	R53334
trans-1,3-Dichloropropene	ND	0.28	1.0		ua/l	1	8/9/2018 3:37:00 PM	R53334
1 2 3-Trichlorobenzene	ND	0.28	1.0		r-9/= ⊔a/l	1	8/9/2018 3:37:00 PM	R53334
1 2 4-Trichlorobenzene	ND	0.20	1.0		µg/⊏ ⊔a/l	1	8/9/2018 3:37:00 PM	R53334
1 1 1-Trichloroethane	ND	0.15	1.0		µg/⊏ ⊔n/l	1	8/9/2018 3:37:00 PM	R53334
1 1 2-Trichloroethane	ND	0.23	1.0		µg/⊏ ⊔n/l	1	8/9/2018 3:37:00 PM	R53334
Trichloroethene (TCE)	ND	0.20	1.0		µg/⊏ ⊔a/l	1	8/9/2018 3:37:00 PM	R53334
		0.20	1.0		μg/L μα/Ι	1	8/9/2018 3:37:00 PM	R53334
1 2 3-Trichloronronane		0.17	2.0		μg/L μα/Ι	1	8/9/2018 3:37:00 PM	R53334
Vipyl chloride		0.37	1.0		µg/L	1	8/0/2018 3:37:00 PM	R53334
		0.11	1.0		µg/L	1	8/0/2018 3:37:00 PM	R53334
Surr: 1.2 Dichloroothana d4	105	0.04	70 120		µy/∟ %Poc	1	8/0/2018 2:27:00 DM	DE3334
Surr: 4 Bromofluorobonzono	103	0	70-130		% Poc	1	8/0/2018 2:27:00 DM	DE3334
Surr: Dibromofluoromothana	103	0	70-130		% Poc	1	8/0/2018 2:27:00 PM	D5222/
Surr: Toluopo de	02.0	0	70-130		% Poc	1	8/0/2018 2:27:00 PM	D5222/
Sull. Toldene-do	93.0	0	70-130		70Rec	I	0/9/2010 3.37.00 FW	R00004
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	0.024	0.0097	0.050	J	mg/L	1	8/16/2018 4:45:36 PN	A53492
Surr: BFB	101	0	70-130		%Rec	1	8/16/2018 4:45:36 PN	A53492
CARBON DIOXIDE							Analyst: <b>sat</b>	
Total Carbon Dioxide	320	0	1.0	Н	mg CO2	2/ 1	8/8/2018 4:48:17 PM	R53305

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

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

**Qualifiers:** 

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 Page 3 of 39

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1808322

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/13/2018

CLIENT:	Andeavor Bloomfield			Client	Sample	e <b>ID:</b> MV	V-1		
Project:	Cross Gradient Wells/	Down Gradient We		Colle	ection I	<b>Date:</b> 8/6/	/2018	7:45:00 AM	
Lab ID:	1808322-001	Matrix:	AQUEOUS	Rec	eived I	<b>Date:</b> 8/7/	7:00:00 AM		
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM2320B	: ALKALINITY							Analyst: sa	t
Bicarbona	ate (As CaCO3)	355.9	20.00	20.00		mg/L Ca	i <b>1</b>	8/8/2018 4:48:17 PM	R53305
Carbonat	e (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	8/8/2018 4:48:17 PM	R53305
Total Alka	alinity (as CaCO3)	355.9	20.00	20.00		mg/L Ca	1	8/8/2018 4:48:17 PM	R53305

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

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
- PQL Practical Quanitative Limit
- 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 Page 4 of 39
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808322

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/13/2018

CLIENT: Andeavor Bloomfield			Client	t Sampl	e ID: M	W-13		
Project: Cross Gradient Wells/Down Gr	adient We		Coll	ection I	Date: 8/6	5/2018	9:10:00 AM	
Lab ID: 1808322-002	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/7	7/2018	7:00:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm	
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/9/2018 10:23:26 PM	1 39667
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/9/2018 10:23:26 PN	1 39667
Surr: DNOP	85.1	0	76.6-135		%Rec	1	8/9/2018 10:23:26 PN	1 39667
EPA METHOD 300.0: ANIONS							Analyst: JRF	ર
Fluoride	ND	0.030	0.10		mg/L	1	8/8/2018 10:43:00 AN	1 R53321
Chloride	230	0.59	10		mg/L	20	8/8/2018 10:55:25 AN	1 R53321
Bromide	2.9	0.027	0.10		mg/L	1	8/8/2018 10:43:00 AN	1 R53321
Phosphorus, Orthophosphate (As P)	ND	0.093	0.50	Н	mg/L	1	8/8/2018 10:43:00 AN	1 R53321
Sulfate	920	4.1	10		mg/L	20	8/8/2018 10:55:25 AN	1 R53321
Nitrate+Nitrite as N	3.5	0.27	1.0		mg/L	5	8/20/2018 5:58:46 PN	1 R53575
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.000074	0.000037	0.00020	J	mg/L	1	8/23/2018 7:04:18 PM	1 39964
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.000052	0.000037	0.00020	JFiltere	d mg/L	1	8/23/2018 7:06:37 PM	1 39964
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: JLF	•
Arsenic	ND	0.020	0.020		mg/L	1	9/7/2018 12:58:16 PN	1 A54000
Barium	0.022	0.00049	0.020		mg/L	1	8/20/2018 1:36:42 PN	1 A53550
Cadmium	ND	0.00088	0.0020		mg/L	1	8/20/2018 1:36:42 PM	1 A53550
Calcium	250	0.15	5.0		mg/L	5	8/20/2018 2:24:15 PN	A53550
Chromium	ND	0.00081	0.0060		mg/L	1	8/20/2018 1:36:42 PM	1 A53550
Copper	0.0027	0.0026	0.0060	J	mg/L	1	8/20/2018 1:36:42 PN	1 A53550
Iron	ND	0.010	0.020		mg/L	1	8/20/2018 1:36:42 PN	1 A53550
Lead	ND	0.0050	0.0050		mg/L	1	8/20/2018 5:08:03 PN	1 B53550
Magnesium	81	0.011	1.0		mg/L	1	8/20/2018 1:36:42 PN	1 A53550
Manganese	1.6	0.00074	0.010		mg/L	5	8/20/2018 2:24:15 PN	1 A53550
Potassium	3.4	0.075	1.0		mg/L	1	8/20/2018 1:36:42 PN	1 A53550
Selenium	ND	0.10	0.25		mg/∟ mg/l	с 1	8/20/2018 2:24:15 PN	1 A5355U
Silver	0.0051	0.0010	0.0050		mg/∟	10	0/20/2010 1.30.42 Plv	1 A53550
Uranium		0.025	0 10		mg/L	10	8/20/2018 1·36·42 PM	Α54000
Zinc	0.040	0.020	0.10		ma/l	1	8/20/2018 1:36:42 PM	A53550
		0.020	0.020		iiig/L	·	Analyst: nm	f
Areasia		0.014	0.000		···· //			1 20004
AISEIIIC		0.011	0.020		mg/∟ ma/l	1	0/13/2018 4:17:43 PN	1 39664
Danum	0.028	0.020	0.020		mg/∟	1	0/13/2010 1:03:34 PN	1 39004
Chromium		0.00099	0.0020		mg/L	1	9/13/2010 1.03.34 PIV	1 30664
			0.0000		mg/L	1	8/13/2010 1.03.34 PIV	1 3066/
Defer to the OC Summary and at		orin abaal-1	0.0000	and OC	nny/∟ data a <del>n 1</del>		mustion information	1 33004

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

**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

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

В Analyte detected in the associated Method Blank

Е Value above quantitation range

- J Analyte detected below quantitation limits Page 5 of 39
- Р Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Lab Order 1808322

Date Reported: 9/13/2018

CLIENT: Project: Lab ID:	Andeavor Bloomfield Cross Gradient Wells/Down Gr 1808322-002	adient We Matrix:	AQUEOUS	Client Colle Rec	Sample ection I ceived I	e ID: M Date: 8/6 Date: 8/7	W-13 5/2018 7/2018	9:10:00 AM 7:00:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 6010	B: TOTAL RECOVERABLE ME	TALS						Analyst: pmf	F
Selenium		ND	0.024	0.050		mg/L	1	8/13/2018 1:03:34 PM	39664
Silver		0.0079	0.0018	0.0050		mg/L	1	8/13/2018 1:03:34 PM	39664
EPA MET	HOD 8260B: VOLATILES							Analyst: RAA	4
Benzene		ND	0.17	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Toluene		ND	0.17	1.0		μg/L	1	8/9/2018 4:01:00 PM	R53334
Ethylbenz	zene	ND	0.22	1.0		μg/L	1	8/9/2018 4:01:00 PM	R53334
Methyl ter	rt-butyl ether (MTBE)	0.72	0.32	1.0	J	µg/L	1	8/9/2018 4:01:00 PM	R53334
1,2,4-Trin	nethylbenzene	ND	0.25	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
1,3,5-Trin	nethylbenzene	ND	0.23	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
1,2-Dichlo	proethane (EDC)	ND	0.40	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
1,2-Dibroi	moethane (EDB)	ND	0.23	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Naphthale	ene	ND	0.29	2.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
1-Methyln	aphthalene	ND	0.34	4.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
2-Methyln	aphthalene	ND	0.24	4.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Acetone		ND	0.79	10		µg/L	1	8/9/2018 4:01:00 PM	R53334
Bromober	nzene	ND	0.32	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Bromodic	hloromethane	ND	0.28	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Bromofor	m	ND	0.32	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Bromome	thane	ND	0.26	3.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
2-Butanor	ne	ND	1.3	10		µg/L	1	8/9/2018 4:01:00 PM	R53334
Carbon di	sulfide	ND	0.39	10		µg/L	1	8/9/2018 4:01:00 PM	R53334
Carbon To	etrachloride	ND	0.13	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Chlorober	nzene	ND	0.29	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Chloroeth	ane	ND	0.16	2.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Chlorofor	m	ND	0.40	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Chlorome	thane	ND	0.29	3.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
2-Chlorot	oluene	ND	0.40	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
4-Chlorot		ND	0.40	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
cis-1,2-D0		ND	0.38	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
cis-1,3-Di	chloropropene	ND	0.30	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
1,2-Dibroi	mo-3-chloropropane	ND	0.47	2.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Dibromoc	hloromethane	ND	0.24	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Dibromon	nethane	ND	0.32	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
1,2-Dichic	brobenzene	ND	0.31	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
1,3-Dichlo		ND	0.31	1.0		µg/∟	1	8/9/2018 4:01:00 PM	R53334
1,4-Dichlo	brobenzene	ND	0.40	1.0		µg/∟	1	8/9/2018 4:01:00 PM	R53334
			1.0	1.0		µg/∟	1	0/9/2018 4:01:00 PM	R03334
			0.40	1.0		µg/∟	1	0/9/2010 4:01:00 PM	R03334
1,1-DICNIC	proeurene	ND	0.12	1.0		µg/∟	1	0/9/2018 4:01:00 PM	K03334

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

- PQL Practical Quanitative Limit
- 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 Page 6 of 39
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
Lab Order 1808322

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/13/2018

CLIENT: Andeavor Bloomfield			Client	Sample	e <b>ID:</b> M	W-13		
Project: Cross Gradient Wells/Down Grad	lient We		Colle	ection I	<b>Date:</b> 8/6	5/2018	9:10:00 AM	
Lab ID: 1808322-002	Matrix: A	AQUEOUS	Rec	eived I	7:00:00 AM			
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: RA	A
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
1,3-Dichloropropane	ND	0.27	1.0		μg/L	1	8/9/2018 4:01:00 PM	R53334
2,2-Dichloropropane	ND	0.18	2.0		μg/L	1	8/9/2018 4:01:00 PM	R53334
1,1-Dichloropropene	ND	0.16	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
Hexachlorobutadiene	ND	0.80	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
2-Hexanone	ND	0.91	10		µg/L	1	8/9/2018 4:01:00 PM	R53334
Isopropylbenzene	ND	0.22	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
4-Isopropyltoluene	ND	0.24	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
4-Methyl-2-pentanone	ND	0.45	10		µg/L	1	8/9/2018 4:01:00 PM	R53334
Methylene Chloride	ND	0.21	3.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
n-Butylbenzene	ND	0.25	3.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
n-Propylbenzene	ND	0.24	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
sec-Butylbenzene	ND	0.20	1.0		ua/L	1	8/9/2018 4:01:00 PM	R53334
Styrene	ND	0.25	1.0		µg/L	1	8/9/2018 4:01:00 PM	R53334
tert-Butvlbenzene	ND	0.22	1.0		ua/L	1	8/9/2018 4:01:00 PM	R53334
1.1.1.2-Tetrachloroethane	ND	0.25	1.0		ua/L	1	8/9/2018 4:01:00 PM	R53334
1.1.2.2-Tetrachloroethane	ND	0.33	2.0		ua/L	1	8/9/2018 4:01:00 PM	R53334
Tetrachloroethene (PCE)	ND	0.15	1.0		ua/L	1	8/9/2018 4:01:00 PM	R53334
trans-1.2-DCF	ND	0.18	1.0		ua/l	1	8/9/2018 4:01:00 PM	R53334
trans-1.3-Dichloropropene	ND	0.28	1.0		µg/= ua/l	1	8/9/2018 4:01:00 PM	R53334
1.2.3-Trichlorobenzene	ND	0.28	1.0		µg/= ua/l	1	8/9/2018 4:01:00 PM	R53334
1.2.4-Trichlorobenzene	ND	0.27	1.0		µg/= ua/l	1	8/9/2018 4:01:00 PM	R53334
1 1 1-Trichloroethane	ND	0.15	1.0		µg/⊏ ua/l	1	8/9/2018 4:01:00 PM	R53334
1 1 2-Trichloroethane	ND	0.23	1.0		µg/⊏ ua/l	1	8/9/2018 4:01:00 PM	R53334
Trichloroethene (TCE)	ND	0.26	1.0		µg/⊏ ua/l	1	8/9/2018 4:01:00 PM	R53334
	ND	0.17	1.0		µg/⊏ ua/l	1	8/9/2018 4:01:00 PM	R53334
1 2 3-Trichloropropage	ND	0.17	2.0		µg/⊑ ⊔a/l	1	8/9/2018 4:01:00 PM	R53334
	ND	0.01	1.0		µg/⊑ ⊔a/l	1	8/9/2018 4:01:00 PM	R53334
	ND	0.64	1.0		µg/⊑ ⊔a/l	1	8/9/2018 4:01:00 PM	R53334
Surr: 1 2-Dichloroethane-d4	107	0.04	70-130		µy/∟ %Rec	1	8/9/2018 4:01:00 PM	R53334
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	8/9/2018 4:01:00 PM	R53334
Surr: Dibromofluoromethane	107	0	70-130		%Rec	1	8/0/2018 4:01:00 PM	P5333/
Surr: Toluono da	02.1	0	70-130		% Poc	1	8/9/2018 4:01:00 PM	D52224
	92.1	0	70-130		/onec	I		K33334
EPA METHOD 8015D: GASOLINE RANGE							Analyst. AG	
Gasoline Range Organics (GRO)	0.033	0.0097	0.050	J	mg/L	1	8/16/2018 5:55:20 PM	1 A53492
Surr: BFB	103	0	70-130		%Rec	1	8/16/2018 5:55:20 PM	1 A53492
CARBON DIOXIDE							Analyst: sat	
Total Carbon Dioxide	890	0	1.0	Н	mg CO2	2/1	8/8/2018 5:03:07 PM	R53305

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

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

**Qualifiers:** 

% Recovery outside of range due to dilution or matrix S

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits Page 7 of 39

Р Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1808322

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/13/2018

CLIENT:	Andeavor Bloomfield			Client	Sample	e <b>ID:</b> MV	W-13		
Project:	Cross Gradient Wells/De	own Gradient We		Colle	ection <b>E</b>	<b>)ate:</b> 8/6	/2018	9:10:00 AM	
Lab ID:	1808322-002	Matrix:	AQUEOUS	Rec	eived D	<b>Date:</b> 8/7	/2018	7:00:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM2320B:	ALKALINITY							Analyst: <b>sa</b> t	:
Bicarbona	te (As CaCO3)	954.5	20.00	20.00		mg/L Ca	a 1	8/8/2018 5:03:07 PM	R53305
Carbonate	e (As CaCO3)	ND	2.000	2.000		mg/L Ca	a 1	8/8/2018 5:03:07 PM	R53305
Total Alka	linity (as CaCO3)	954.5	20.00	20.00		mg/L Ca	a 1	8/8/2018 5:03:07 PM	R53305

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

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
- PQL Practical Quanitative Limit
- 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 Page 8 of 39
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808322

Date Reported: 9/13/2018

CLIENT: Andeavor Bloomfield			Client	t Sampl	e ID: M	W-34		
<b>Project:</b> Cross Gradient Wells/Down Gr	adient We		Coll	ection I	<b>Date:</b> 8/6	5/2018	1:45:00 PM	
Lab ID: 1808322-003	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/7	7/2018	7:00:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm	
Diesel Range Organics (DRO)	0.40	0.31	0.40	J	mg/L	1	8/9/2018 10:45:41 PN	39667
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/9/2018 10:45:41 PM	39667
Surr: DNOP	86.7	0	76.6-135		%Rec	1	8/9/2018 10:45:41 PN	39667
EPA METHOD 300.0: ANIONS							Analyst: JRF	र
Fluoride	0.55	0.15	0.50		mg/L	5	8/8/2018 11:32:39 AN	I R53321
Chloride	240	0.59	10		mg/L	20	8/8/2018 11:45:03 AN	I R53321
Bromide	3.5	0.13	0.50		mg/L	5	8/8/2018 11:32:39 AN	I R53321
Phosphorus, Orthophosphate (As P)	ND	0.46	2.5		mg/L	5	8/8/2018 11:32:39 AN	I R53321
Sulfate	30	1.0	2.5		mg/L	5	8/8/2018 11:32:39 AN	I R53321
Nitrate+Nitrite as N	ND	0.27	1.0		mg/L	5	8/20/2018 6:11:38 PM	I R53575
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.000092	0.000037	0.00020	J	mg/L	1	8/23/2018 7:08:47 PN	1 39964
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.000079	0.000037	0.00020	JFiltere	d mg/L	1	8/23/2018 7:10:58 PM	39964
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: pm	f
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 2:35:49 PM	I A53717
Barium	0.38	0.00049	0.020		mg/L	1	8/20/2018 1:38:30 PN	A53550
Cadmium	ND	0.00088	0.0020		mg/L	1	8/20/2018 1:38:30 PN	A53550
Calcium	120	0.15	5.0		mg/L	5	8/20/2018 2:33:28 PN	A53550
Chromium	ND	0.00081	0.0060		mg/L	1	8/20/2018 1:38:30 PM	A53550
Copper	ND	0.0026	0.0060		mg/L	1	8/20/2018 1:38:30 PM	A53550
Iron	3.0	0.051	0.10		mg/L	5	8/20/2018 2:33:28 PM	A53550
Lead	0.0050	0.0050	0.0050		mg/L	1	8/20/2018 5:09:46 PM	B53550
Magnesium	23	0.011	1.0		mg/L	1	8/20/2018 1:38:30 PM	A53550
Manganese	3.8	0.00074	0.010		mg/L	5	8/20/2018 2:33:28 PN	A53550
Potassium	1.2	0.075	1.0		mg/L	1	8/20/2018 1:38:30 PM	A53550
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 2:35:49 PN	I A53717
Silver	0.0027	0.0010	0.0050	J	mg/L	1	8/20/2018 1:38:30 PM	A53550
Sodium	440	1.3	5.0		mg/L	5	8/20/2018 2:33:28 PN	A53550
Uranium	ND	0.025	0.10		mg/L	1	8/20/2018 1:38:30 PM	A53550
Zinc	0.046	0.020	0.020		mg/L	1	8/20/2018 1:38:30 PN	A53550
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: <b>pm</b>	f
Arsenic	0.015	0.011	0.020	J	mg/L	1	8/13/2018 4:19:09 PN	39664
Barium	0.42	0.020	0.020		mg/L	1	8/13/2018 1:05:16 PN	39664
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 1:05:16 PN	39664
Chromium	ND	0.0011	0.0060		mg/L	1	8/13/2018 1:05:16 PN	39664
Lead	ND	0.0050	0.0050		mg/L	1	8/13/2018 1:05:16 PN	39664
Refer to the OC Summary report	and sample l	ogin checklis	st for flag	ged OC	data and	prese	rvation information.	

eŀ ł )g igg ia p

**Qualifiers:** \* Value exceeds Maximum Contaminant Level.

> D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits Page 9 of 39

Р Sample pH Not In Range RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Lab Order 1808322

Date Reported: 9/13/2018

CLIENT: Project: Lab ID:	Andeavor Bloomfield Cross Gradient Wells/Down Gr 1808322-003	adient We <b>Matrix:</b>	AQUEOUS	Client Colle Rec	Sample ection I ceived I	e ID: M Date: 8/6 Date: 8/7	W-34 5/2018 7/2018	1:45:00 PM 7:00:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 6010	B: TOTAL RECOVERABLE ME	TALS						Analyst: pmf	:
Selenium		ND	0.024	0.050		mg/L	1	8/13/2018 1:05:16 PM	39664
Silver		0.0035	0.0018	0.0050	J	mg/L	1	8/13/2018 1:05:16 PM	39664
EPA METI	HOD 8260B: VOLATILES							Analyst: RAA	4
Benzene		ND	0.17	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Toluene		ND	0.17	1.0		μg/L	1	8/9/2018 4:26:00 PM	R53334
Ethylbenz	zene	ND	0.22	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Methyl ter	rt-butyl ether (MTBE)	0.57	0.32	1.0	J	µg/L	1	8/9/2018 4:26:00 PM	R53334
1,2,4-Trim	nethylbenzene	ND	0.25	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
1,3,5-Trim	nethylbenzene	ND	0.23	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
1,2-Dichlo	proethane (EDC)	ND	0.40	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
1,2-Dibror	moethane (EDB)	ND	0.23	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Naphthale	ene	ND	0.29	2.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
1-Methyln	aphthalene	ND	0.34	4.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
2-Methyln	aphthalene	0.28	0.24	4.0	J	µg/L	1	8/9/2018 4:26:00 PM	R53334
Acetone		8.0	0.79	10	J	µg/L	1	8/9/2018 4:26:00 PM	R53334
Bromober	nzene	ND	0.32	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Bromodic	hloromethane	ND	0.28	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Bromofor	m	ND	0.32	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Bromome	thane	ND	0.26	3.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
2-Butanor	ne	ND	1.3	10		µg/L	1	8/9/2018 4:26:00 PM	R53334
Carbon di	sulfide	ND	0.39	10		µg/L	1	8/9/2018 4:26:00 PM	R53334
Carbon Te	etrachloride	ND	0.13	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Chlorober	nzene	ND	0.29	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Chloroeth	ane	ND	0.16	2.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Chlorofor	m	ND	0.40	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Chlorome	thane	ND	0.29	3.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
2-Chloroto	oluene	ND	0.40	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
4-Chloroto		ND	0.40	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
cis-1,2-D0		ND	0.38	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
cis-1,3-Di	chloropropene	ND	0.30	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
1,2-Dibror	mo-3-chloropropane	ND	0.47	2.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Dibromoc	hloromethane	ND	0.24	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
Dibromon	nethane	ND	0.32	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
1,2-Dichlo	propenzene	ND	0.31	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
1,3-Dichlo		ND	0.31	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334
1,4-Dichlo	brobenzene	ND	0.40	1.0		µg/∟	1	8/9/2018 4:26:00 PM	R53334
			1.0	1.0		µg/∟	1	0/9/2018 4:26:00 PM	K03334
			0.40	1.0		µg/∟	1	0/9/2010 4:20:00 PM	R03334
1,1-Dicnic	proeurene	ND	0.12	1.0		µg/∟	Т	0/9/2018 4:26:00 PM	K03334

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 10 of 39
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808322

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/13/2018

CLIENT: Andeavor Bloomfield Project: Cross Gradient Wells/Down Gradient We				Client Sample ID: MW-34 Collection Date: 8/6/2018 1:45:00 PM								
Lab ID: 1808322-003	Matrix: A	QUEOUS	Rec	eived I	Date: 8/7	/2018	7:00:00 AM					
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID				
EPA METHOD 8260B: VOLATILES							Analyst: RA	A				
1.2-Dichloropropane	ND	0.15	1.0		ua/L	1	8/9/2018 4:26:00 PM	R53334				
1.3-Dichloropropane	ND	0.27	1.0		ua/L	1	8/9/2018 4:26:00 PM	R53334				
2.2-Dichloropropane	ND	0.18	2.0		ua/L	1	8/9/2018 4:26:00 PM	R53334				
1,1-Dichloropropene	ND	0.16	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334				
Hexachlorobutadiene	ND	0.80	1.0		µg/L	1	8/9/2018 4:26:00 PM	R53334				
2-Hexanone	ND	0.91	10		ua/L	1	8/9/2018 4:26:00 PM	R53334				
Isopropylbenzene	ND	0.22	1.0		ua/L	1	8/9/2018 4:26:00 PM	R53334				
4-Isopropyltoluene	ND	0.24	1.0		ua/L	1	8/9/2018 4:26:00 PM	R53334				
4-Methyl-2-pentanone	ND	0.45	10		ua/L	1	8/9/2018 4:26:00 PM	R53334				
Methylene Chloride	ND	0.21	3.0		ua/l	1	8/9/2018 4:26:00 PM	R53334				
n-Butylbenzene	ND	0.25	3.0		ua/l	1	8/9/2018 4:26:00 PM	R53334				
n-Propylbenzene	ND	0.24	1.0		µg/= ua/l	1	8/9/2018 4:26:00 PM	R53334				
sec-Butylbenzene	0.40	0.20	1.0	J	µg/= ua/l	1	8/9/2018 4:26:00 PM	R53334				
Styrene	ND	0.25	1.0	Ū.	µg/= ua/l	1	8/9/2018 4:26:00 PM	R53334				
tert-Butylbenzene	1.7	0.22	1.0		µg/= ua/l	1	8/9/2018 4:26:00 PM	R53334				
1.1.1.2-Tetrachloroethane	ND	0.25	1.0		µg/= ua/l	1	8/9/2018 4:26:00 PM	R53334				
1 1 2 2-Tetrachloroethane	ND	0.33	2.0		r-9/ − ⊔a/l	1	8/9/2018 4·26·00 PM	R53334				
Tetrachloroethene (PCF)	ND	0.00	1.0		µg/⊏ ua/l	1	8/9/2018 4·26·00 PM	R53334				
trans-1 2-DCE	ND	0.18	1.0		µg/⊏ ua/l	1	8/9/2018 4:26:00 PM	R53334				
trans-1 3-Dichloropropene	ND	0.10	1.0		µg/⊑ ug/l	1	8/9/2018 4:26:00 PM	R53334				
1 2 3-Trichlorobenzene	ND	0.28	1.0		µg/⊑ ug/l	1	8/9/2018 4:26:00 PM	R53334				
1 2 4-Trichlorobenzene	ND	0.20	1.0		μg/L μα/Ι	1	8/9/2018 4:26:00 PM	R53334				
1 1 1-Trichloroethane	ND	0.27	1.0		μg/L μα/Ι	1	8/9/2018 4:26:00 PM	R53334				
1 1 2-Trichloroethane	ND	0.13	1.0		μg/L μα/Ι	1	8/9/2018 4:26:00 PM	R53334				
Trichloroethene (TCE)		0.25	1.0		µg/∟ ug/l	1	8/9/2018 4:26:00 PM	R5333/				
		0.20	1.0		µg/∟ ug/l	1	8/9/2018 4:26:00 PM	R5333/				
1 2 3-Trichloropropage		0.17	2.0		µg/∟ ug/l	1	8/9/2018 4:26:00 PM	R5333/				
		0.57	2.0		µg/∟ ug/l	1	8/9/2018 4:26:00 PM	R5333/				
		0.11	1.0		µg/∟ ug/l	1	8/9/2018 4:26:00 PM	R5333/				
Surr: 1.2 Dichleroothano d4	107	0.04	70 120		µy/∟ %Poo	1	8/9/2018 4:20:00 PM	D5222/				
Surr: 4 Promofluorohonzono	107	0	70-130			1	8/9/2010 4.20.00 FM	DE2224				
Surr: Dibromofluoromothana	102	0	70-130			1	8/9/2010 4.20.00 FM	DE2224				
	102	0	70-130			1	8/9/2018 4.20.00 FM	R00004				
Sull. Toluene-do	91.0	0	70-130		%Rec	I	6/9/2016 4.20.00 PIN	K00004				
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG					
Gasoline Range Organics (GRO)	1.2	0.0097	0.050		mg/L	1	8/16/2018 6:18:37 PM	1 A53492				
Surr: BFB	112	0	70-130		%Rec	1	8/16/2018 6:18:37 PM	1 A53492				
CARBON DIOXIDE							Analyst: JRI	R				
Total Carbon Dioxide	870	0	2.5	Н	mg CO2	2/ 2.5	8/16/2018 1:16:36 AM	1 R53469				

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

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

**Qualifiers:** 

% Recovery outside of range due to dilution or matrix S

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits Page 11 of 39

Р Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1808322

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/13/2018

CLIENT:	Andeavor Bloomfield			Client	Sample	e <b>ID:</b> MV	W-34		
Project:	Cross Gradient Wells	Down Gradient We		Colle	ection I	<b>Date:</b> 8/6	/2018	1:45:00 PM	
Lab ID:	1808322-003	Matrix:	AQUEOUS	Rec	eived I	<b>)ate:</b> 8/7	/2018	7:00:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM2320B:								Analyst: JR	R
Bicarbona	ate (As CaCO3)	970.0	50.00	50.00		mg/L Ca	a 2.5	8/16/2018 1:16:36 A	M R53469
Carbonate	e (As CaCO3)	ND	5.000	5.000		mg/L Ca	a 2.5	8/16/2018 1:16:36 A	M R53469
Total Alka	linity (as CaCO3)	970.0	50.00	50.00		mg/L Ca	a 2.5	8/16/2018 1:16:36 A	M R53469

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

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
- PQL Practical Quanitative Limit
- 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 Page 12 of 39
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808322

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/13/2018

<b>CLIENT:</b> Andeavor Bloomfield			Client	t Sampl	e <b>ID:</b> M	W-11		
Project: Cross Gradient Wells/Down G	radient We		Coll	ection I	<b>Date:</b> 8/6	5/2018	3:00:00 PM	
Lab ID: 1808322-004	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/7	7/2018	7:00:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm	l
Diesel Range Organics (DRO)	0.45	0.31	0.40		mg/L	1	8/9/2018 11:07:52 PM	/ 39667
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/9/2018 11:07:52 PM	1 39667
Surr: DNOP	86.3	0	76.6-135		%Rec	1	8/9/2018 11:07:52 PM	1 39667
EPA METHOD 300.0: ANIONS							Analyst: JRI	R
Fluoride	0.28	0.15	0.50	J	mg/L	5	8/8/2018 11:57:28 AM	/ R53321
Chloride	220	0.59	10		mg/L	20	8/8/2018 12:09:53 PM	/ R53321
Bromide	3.5	0.13	0.50		mg/L	5	8/8/2018 11:57:28 AM	A R53321
Phosphorus, Orthophosphate (As P)	ND	0.46	2.5		mg/L	5	8/8/2018 11:57:28 AM	A R53321
Sulfate	2.2	1.0	2.5	J	mg/L	5	8/8/2018 11:57:28 AM	A R53321
Nitrate+Nitrite as N	ND	0.27	1.0		mg/L	5	8/20/2018 7:03:04 PM	A53575
EPA METHOD 7470: MERCURY							Analyst: rde	•
Mercury	0.000087	0.000037	0.00020	J	mg/L	1	8/23/2018 7:13:10 PM	1 39964
EPA METHOD 7470: MERCURY							Analyst: rde	)
Mercury	0.000078	0.000037	0.00020	JFiltere	d mg/L	1	8/23/2018 7:15:23 PM	1 39964
EPA METHOD 6010B: DISSOLVED MET	ALS						Analyst: <b>pm</b>	f
Arsenic	0.021	0.020	0.020		mg/L	1	8/27/2018 2:37:24 PM	A53717
Barium	0.74	0.00049	0.020		mg/L	1	8/20/2018 1:40:11 PM	A53550
Cadmium	ND	0.00088	0.0020		mg/L	1	8/20/2018 1:40:11 PM	A53550
Calcium	120	0.15	5.0		mg/L	5	8/20/2018 2:35:21 PM	A53550
Chromium	ND	0.00081	0.0060		mg/L	1	8/20/2018 1:40:11 PM	A53550
Copper	ND	0.0026	0.0060		mg/L	1	8/20/2018 1:40:11 PM	A53550
Iron	1.9	0.051	0.10		mg/L	5	8/20/2018 2:35:21 PM	A53550
Lead	ND	0.0050	0.0050		mg/L	1	8/20/2018 5:11:20 PM	A B53550
Magnesium	27	0.011	1.0		mg/L	1	8/20/2018 1:40:11 PM	A53550
Manganese	2.0	0.00074	0.010		mg/L	5	8/20/2018 2:35:21 PM	A53550
Potassium	1.8	0.075	1.0		mg/L	1	8/20/2018 1:40:11 PM	A53550
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 2:37:24 PM	A53717
Silver	0.0031	0.0010	0.0050	J	mg/L	1	8/20/2018 1:40:11 PM	A53550
Sodium	440	1.3	5.0		mg/L	5	8/20/2018 2:35:21 PM	A53550
Uranium	ND	0.025	0.10		mg/L	1	8/20/2018 1:40:11 PM	A53550
Zinc	ND	0.020	0.020		mg/L	1	8/20/2018 1:40:11 PM	A53550
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: <b>pm</b>	f
Arsenic	ND	0.011	0.020		mg/L	1	8/13/2018 4:24:57 PM	/ 39664
Barium	0.77	0.020	0.020		mg/L	1	8/13/2018 1:06:56 PM	1 39664
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 1:06:56 PM	1 39664
Chromium	ND	0.0011	0.0060		mg/L	1	8/13/2018 1:06:56 PM	1 39664
Lead	ND	0.0050	0.0050		mg/L	1	8/13/2018 8:25:09 PM	/ 39664

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

**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

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 13 of 39
- Р Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Lab Order 1808322

Date Reported: 9/13/2018

CLIENT: Andeavor Bloomfield Project: Cross Gradient Wells/Down Gra Lab ID: 1808322-004	dient We <b>Matrix:</b> A	AQUEOUS	Client Colle Rec	Sample ection I ectived I	e ID: M Date: 8/6 Date: 8/7	W-11 5/2018 7/2018	3:00:00 PM 7:00:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 6010B: TOTAL RECOVERABLE MET	ALS						Analyst: pmf	
Selenium	ND	0.024	0.050		mg/L	1	8/13/2018 1:06:56 PM	39664
Silver	0.0040	0.0018	0.0050	J	mg/L	1	8/13/2018 1:06:56 PM	39664
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	29	50		µg/L	1	8/13/2018 11:51:09 PM	39686
Acenaphthylene	ND	31	50		µg/L	1	8/13/2018 11:51:09 PM	39686
Aniline	ND	31	50		µg/L	1	8/13/2018 11:51:09 PM	39686
Anthracene	ND	29	50		µg/L	1	8/13/2018 11:51:09 PM	39686
Azobenzene	ND	34	50		μg/L	1	8/13/2018 11:51:09 PM	39686
Benz(a)anthracene	ND	26	50		µg/L	1	8/13/2018 11:51:09 PM	39686
Benzo(a)pyrene	ND	30	50		µg/L	1	8/13/2018 11:51:09 PM	39686
Benzo(b)fluoranthene	ND	36	50		µg/L	1	8/13/2018 11:51:09 PM	39686
Benzo(g,h,i)perylene	ND	28	50		µg/L	1	8/13/2018 11:51:09 PM	39686
Benzo(k)fluoranthene	ND	32	50		ua/L	1	8/13/2018 11:51:09 PM	39686
Benzoic acid	ND	32	100		µg/L	1	8/13/2018 11:51:09 PM	39686
Benzyl alcohol	ND	31	50		ua/L	1	8/13/2018 11:51:09 PM	39686
Bis(2-chloroethoxy)methane	ND	31	50		ua/L	1	8/13/2018 11:51:09 PM	39686
Bis(2-chloroethyl)ether	ND	32	50		ua/L	1	8/13/2018 11:51:09 PM	39686
Bis(2-chloroisopropyl)ether	ND	24	50		ua/l	1	8/13/2018 11:51:09 PM	39686
Bis(2-ethylbexyl)phthalate	ND	40	50		µg/= ua/l	1	8/13/2018 11:51:09 PM	1 39686
4-Bromonhenyl phenyl ether	ND	35	50		r-9/ − ua/l	1	8/13/2018 11:51:09 PM	1 39686
Butyl benzyl obthalate	ND	32	50		µg/⊏ ua/l	1	8/13/2018 11:51:09 PM	1 39686
Carbazole	ND	31	50		µg/⊑ ⊔a/l	1	8/13/2018 11:51:09 PM	1 39686
4-Chloro-3-methylphenol	ND	28	50		µg/⊏ ua/l	1	8/13/2018 11:51:09 PM	1 39686
4-Chloroaniline	ND	30	50		µg/⊑ ug/l	1	8/13/2018 11:51:09 PM	1 39686
2-Chloronanhthalene	ND	30	50		µg/∟ ug/l	1	8/13/2018 11:51:00 PM	1 30686
2 Chlorophonol		20	50		µg/∟ ug/l	1	8/13/2018 11:51:09 TW	1 20686
2-Chlorophenol		29	50		µg/∟ ug/l	1	8/13/2018 11:51:09 FW	1 30686
		34	50		µg/∟ ug/l	1	8/13/2018 11:51:09 FW	1 30686
		34	50		µg/∟ ug/l	1	0/13/2010 11.51.09 FW	1 20606
		34	50		µg/∟ ua/l	1	0/13/2010 11.51.09 FW	1 20606
Di-II-Octyl plitialate		31	50		µg/∟ ua/l	1	0/13/2010 11.51.09 FW	1 20606
Dibenze(a,n)animacene	ND	20	50		µg/∟	1	0/13/2010 11.51.09 PN	00000
Dibenzoruran	ND	34	50		µg/∟	1	8/13/2018 11:51:09 PN	39686
1,2-Dichlorobenzene	ND	30	50		µg/∟	1	8/13/2018 11:51:09 PN	39686
1,3-Dichlorobenzene	ND	29	50		µg/L	1	8/13/2018 11:51:09 PM	39686
1,4-Dichlorobenzene	ND	29	50		µg/L	1	8/13/2018 11:51:09 PM	39686
3,3 -Dichlorobenzidine	ND	34	50		µg/L	1	8/13/2018 11:51:09 PM	39686
Diethyl phthalate	ND	31	50		µg/L	1	8/13/2018 11:51:09 PM	39686
Dimethyl phthalate	ND	30	50		µg/L	1	8/13/2018 11:51:09 PM	39686
2,4-Dichlorophenol	ND	29	100		µg/L	1	8/13/2018 11:51:09 PM	39686
			a a					

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

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

Hall Environmental Analysis Laboratory, Inc.

- PQL Practical Quanitative Limit
- 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 Page 14 of 39
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808322

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/13/2018

CLIENT: Andeavor Bloomfield Project: Cross Gradient Wells/Down Gra	dient We		Client Colle	Sample ID: ection Date:	MW-11 8/6/2018	3 3:00:00 PM				
Lab ID: 1808322-004	Matrix: A	QUEOUS	Rec	eived Date:	8/7/2018	/2018 7:00:00 AM				
Analyses	Result	MDL	PQL	Qual Uni	ts DF	Date Analyzed	Batch ID			
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JD	С			
2,4-Dimethylphenol	ND	30	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
4,6-Dinitro-2-methylphenol	ND	27	100	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
2,4-Dinitrophenol	ND	19	100	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
2,4-Dinitrotoluene	ND	29	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
2,6-Dinitrotoluene	ND	30	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Fluoranthene	ND	29	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Fluorene	ND	32	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Hexachlorobenzene	ND	31	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Hexachlorobutadiene	ND	32	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Hexachlorocyclopentadiene	ND	20	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Hexachloroethane	ND	30	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Indeno(1,2,3-cd)pyrene	ND	35	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Isophorone	ND	31	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
1-Methylnaphthalene	ND	35	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
2-Methylnaphthalene	ND	32	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
2-Methylphenol	ND	32	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
3+4-Methylphenol	ND	27	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
N-Nitrosodi-n-propylamine	ND	31	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
N-Nitrosodimethylamine	ND	34	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
N-Nitrosodiphenylamine	ND	33	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Naphthalene	61	25	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
2-Nitroaniline	ND	29	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
3-Nitroaniline	ND	34	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
4-Nitroaniline	ND	30	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Nitrobenzene	ND	30	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
2-Nitrophenol	ND	30	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
4-Nitrophenol	ND	28	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Pentachlorophenol	ND	26	100	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Phenanthrene	ND	30	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Phenol	ND	30	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Pyrene	ND	33	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Pyridine	ND	27	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
1,2,4-Trichlorobenzene	ND	32	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
2,4,5-Trichlorophenol	ND	29	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
2,4,6-Trichlorophenol	ND	32	50	µg/L	. 1	8/13/2018 11:51:09 I	PM 39686			
Surr: 2-Fluorophenol	49.2	0	15-74.1	%R	ec 1	8/13/2018 11:51:09 I	PM 39686			
Surr: Phenol-d5	39.2	0	15-59.8	%R	ec 1	8/13/2018 11:51:09 I	PM 39686			
Surr: 2,4,6-Tribromophenol	65.1	0	22.1-112	%R	ec 1	8/13/2018 11:51:09 I	PM 39686			
Surr: Nitrobenzene-d5	70.2	0	33.2-94	%R	ec 1	8/13/2018 11:51:09 I	PM 39686			

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

**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

- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 15 of 39
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808322

Date Reported: 9/13/2018

CLIENT: Project:	Andeavor Bloomfield	dient We		Client	Sample	e ID: M Date: 8/0	W-11	3:00:00 PM	
Lab ID:	1808322-004	Matrix:	AQUEOUS	Rec	ceived I	Date: 8/	7/2018	7:00:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID
EPA MET	HOD 8270C: SEMIVOLATILES							Analyst: JDC	
Surr: 2	-Fluorobiphenyl	64.1	0	34-90.9		%Rec	1	8/13/2018 11:51:09 PM	39686
Surr: 4	-Terphenyl-d14	75.8	0	15-149		%Rec	1	8/13/2018 11:51:09 PM	39686
EPA MET	HOD 8260B: VOLATILES							Analyst: RAA	
Benzene		66	0.17	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
Toluene		ND	0.17	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
Ethylbenz	zene	0.68	0.22	1.0	J	µg/L	1	8/9/2018 4:51:00 PM	R53334
Methyl ter	rt-butyl ether (MTBE)	1.3	0.32	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
1,2,4-Trin	nethylbenzene	67	2.5	10		µg/L	10	8/10/2018 1:19:00 PM	R53350
1,3,5-Trin	nethylbenzene	ND	0.23	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
1,2-Dichlo	proethane (EDC)	ND	0.40	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
1,2-Dibro	moethane (EDB)	ND	0.23	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
Naphthale	ene	98	0.29	2.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
1-Methyln	haphthalene	15	0.34	4.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
2-Methyln	haphthalene	25	0.24	4.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
Acetone		10	0.79	10		µg/L	1	8/9/2018 4:51:00 PM	R53334
Bromobe	nzene	ND	0.32	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
Bromodic	hloromethane	ND	0.28	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
Bromofor	m	ND	0.32	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
Bromome	ethane	ND	0.26	3.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
2-Butanoi	ne	ND	1.3	10		µg/L	1	8/9/2018 4:51:00 PM	R53334
Carbon d	Isulfide	ND	0.39	10		µg/L	1	8/9/2018 4:51:00 PM	R53334
Carbon I	etrachloride	ND	0.13	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
Chlorobei	nzene	ND	0.29	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
Chioroeth	lane	ND	0.16	2.0		µg/∟	1	8/9/2018 4:51:00 PM	R53334
Chlorotor	m utrana		0.40	1.0		µg/∟	1	8/9/2018 4:51:00 PM	R53334
2 Chlorot			0.29	3.0		µg/∟ ug/l	1	0/9/2010 4.51.00 PW	R00004
2-Chlorot			0.40	1.0		µg/∟ ug/l	1	0/9/2010 4.51.00 PW	R00004
4-0110100			0.40	1.0		µg/∟ ug/l	1	8/0/2018 4:51:00 PM	R00004
cis-1,2-Di	chloropropene		0.30	1.0		µg/∟	1	8/9/2018 4:51:00 PM	R53334
1.2-Dibroi	mo-3-chloropropane		0.30	2.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
Dibromoc	hloromethane		0.47	2.0		µg/L ug/l	1	8/9/2018 4:51:00 PM	R53334
Dibromon	nethane		0.24	1.0		μg/L μα/Ι	1	8/9/2018 4:51:00 PM	R53334
1 2-Dichl	probenzene	ND	0.31	1.0		µg/⊏ ua/l	1	8/9/2018 4:51:00 PM	R53334
1.3-Dichlo	probenzene	ND	0.31	1.0		ua/l	1	8/9/2018 4:51:00 PM	R53334
1.4-Dichle	probenzene	ND	0.40	1.0		ua/L	1	8/9/2018 4:51:00 PM	R53334
Dichlorod	ifluoromethane	ND	1.0	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
1,1-Dichlo	proethane	ND	0.40	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334
1,1-Dichlo	proethene	ND	0.12	1.0		μg/L	1	8/9/2018 4:51:00 PM	R53334

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 16 of 39
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808322

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/13/2018

CLIENT: Andeavor Bloomfield	Client Sample ID: MW-11								
Project: Cross Gradient Wells/Down Grad	lient We		Collection Date: 8/6/2018 3:00:00 PM						
Lab ID: 1808322-004	Matrix: A	trix: AQUEOUS Received Date: 8/7/2018 7:00:00 AM							
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID	
EPA METHOD 8260B: VOLATILES							Analyst: RA	A	
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
1,3-Dichloropropane	ND	0.27	1.0		μg/L	1	8/9/2018 4:51:00 PM	R53334	
2,2-Dichloropropane	ND	0.18	2.0		μg/L	1	8/9/2018 4:51:00 PM	R53334	
1,1-Dichloropropene	ND	0.16	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
Hexachlorobutadiene	ND	0.80	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
2-Hexanone	ND	0.91	10		µg/L	1	8/9/2018 4:51:00 PM	R53334	
Isopropylbenzene	63	0.22	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
4-Isopropyltoluene	1.9	0.24	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
4-Methyl-2-pentanone	ND	0.45	10		µg/L	1	8/9/2018 4:51:00 PM	R53334	
Methylene Chloride	ND	0.21	3.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
n-Butylbenzene	2.1	0.25	3.0	J	µg/L	1	8/9/2018 4:51:00 PM	R53334	
n-Propylbenzene	70	0.24	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
sec-Butylbenzene	9.1	0.20	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
Styrene	ND	0.25	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
tert-Butylbenzene	2.0	0.22	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
1,1,1,2-Tetrachloroethane	ND	0.25	1.0		µg/L	1	8/9/2018 4:51:00 PM	R53334	
1.1.2.2-Tetrachloroethane	ND	0.33	2.0		ua/L	1	8/9/2018 4:51:00 PM	R53334	
Tetrachloroethene (PCE)	ND	0.15	1.0		ua/L	1	8/9/2018 4:51:00 PM	R53334	
trans-1.2-DCE	ND	0.18	1.0		ua/L	1	8/9/2018 4:51:00 PM	R53334	
trans-1.3-Dichloropropene	ND	0.28	1.0		ua/L	1	8/9/2018 4:51:00 PM	R53334	
1.2.3-Trichlorobenzene	ND	0.28	1.0		ua/L	1	8/9/2018 4:51:00 PM	R53334	
1.2.4-Trichlorobenzene	ND	0.27	1.0		ua/l	1	8/9/2018 4:51:00 PM	R53334	
1.1.1-Trichloroethane	ND	0.15	1.0		ua/l	1	8/9/2018 4:51:00 PM	R53334	
1.1.2-Trichloroethane	ND	0.23	1.0		ua/l	1	8/9/2018 4:51:00 PM	R53334	
Trichloroethene (TCE)	ND	0.26	1.0		ua/l	1	8/9/2018 4:51:00 PM	R53334	
Trichlorofluoromethane	ND	0.17	1.0		ua/l	1	8/9/2018 4:51:00 PM	R53334	
1.2.3-Trichloropropane	ND	0.57	2.0		ua/l	1	8/9/2018 4:51:00 PM	R53334	
	ND	0.11	1.0		r-9/= ⊔a/l	1	8/9/2018 4:51:00 PM	R53334	
Xvlenes Total	ND	0.64	1.0		µg/⊏ ug/l	1	8/9/2018 4:51:00 PM	R53334	
Surr: 1 2-Dichloroethane-d4	104	0	70-130		¤9/⊏ %Rec	1	8/9/2018 4:51:00 PM	R53334	
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	8/9/2018 4:51:00 PM	R53334	
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	8/9/2018 4:51:00 PM	R53334	
Surr: Toluene-d8	96.2	0	70-130		%Rec	1	8/9/2018 4·51·00 PM	R53334	
FPA METHOD 8015D: GASOLINE RANGE	00.2	Ŭ	10 100		/01/00	•	Analyst: AG	100000-	
	1 0	0.0007	0.050		ma/l	1	8/16/2019 6:41-50 DM	1 152400	
Surr: BFR	۰.۵ 7 م	0.0097 0	70-130		mg/∟ %R≏c	1	8/16/2018 6·41·58 PM	1 Δ53492	
	51.1	U	10-100		/01/00		A	, AUU402	
CARBON DIOXIDE							Analyst: JRI	۲	
Total Carbon Dioxide	900	0	2.5	Н	mg CO	2/ 2.5	8/16/2018 1:32:11 AM	1 R53469	

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

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

**Qualifiers:** 

% Recovery outside of range due to dilution or matrix S

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits Page 17 of 39

Р Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1808322

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/13/2018

CLIENT:	Andeavor Bloomfield			Client					
Project:	Cross Gradient Wells/D	own Gradient We		Coll					
Lab ID:	1808322-004	Matrix:	Matrix: AQUEOUS         Received Date: 8/7/2018 7:00:00 A					7:00:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM2320B:				Analyst: JRR				R	
Bicarbona	ate (As CaCO3)	1006	50.00	50.00		mg/L C	a 2.5	8/16/2018 1:32:11 A	M R53469
Carbonate	e (As CaCO3)	ND	5.000	5.000		mg/L C	a 2.5	8/16/2018 1:32:11 A	M R53469
Total Alka	alinity (as CaCO3)	1006	50.00	50.00		mg/L C	a 2.5	8/16/2018 1:32:11 A	M R53469

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

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
- PQL Practical Quanitative Limit
- 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 Page 18 of 39
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808322

Date Reported: 9/13/2018

CLIENT:	Andeavor Bloomfield			Client	Sample	e <b>ID:</b> Tr	ip Bla	nk			
Project:	Cross Gradient Wells/Down Gr	radient We		Collection Date:							
Lab ID:	1808322-005	Matrix: A	QUEOUS	Rec	eived I	Date: 8/7	7/2018	7:00:00 AM			
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID		
EPA METI	HOD 8260B: VOLATILES							Analyst: RA	4		
Benzene		ND	0.17	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
Toluene		ND	0.17	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
Ethylbenz	rene	ND	0.22	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
Methyl ter	t-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
1,2,4-1 rim	nethylbenzene	ND	0.25	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
1,3,5-1 rim	netnylbenzene	ND	0.23	1.0		µg/∟ ua/l	1	8/9/2018 5:15:00 PM	R53334		
1,2-Dichic	moethane (EDC)	ND	0.40	1.0		µg/∟ ug/l	1	8/9/2018 5:15:00 PM	R03334		
Nanhthale		1.2	0.23	1.0		µg/∟ ug/l	1	8/9/2018 5:15:00 PM	R53334		
1-Mothyln	anhthalene	0.42	0.23	2.0 4.0	Т	μg/L μα/l	י 1	8/9/2018 5:15:00 PM	R53334		
2-Methvln		0.63	0.04	4.0	.1	μg/L μα/Ι	1	8/9/2018 5:15:00 PM	R53334		
Acetone		ND	0.79	10	Ũ	µg/= ua/L	1	8/9/2018 5:15:00 PM	R53334		
Bromober	nzene	ND	0.32	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
Bromodic	hloromethane	ND	0.28	1.0		μg/L	1	8/9/2018 5:15:00 PM	R53334		
Bromofori	m	ND	0.32	1.0		μg/L	1	8/9/2018 5:15:00 PM	R53334		
Bromome	thane	ND	0.26	3.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
2-Butanor	ne	ND	1.3	10		µg/L	1	8/9/2018 5:15:00 PM	R53334		
Carbon di	sulfide	ND	0.39	10		µg/L	1	8/9/2018 5:15:00 PM	R53334		
Carbon Te	etrachloride	ND	0.13	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
Chlorober	nzene	ND	0.29	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
Chloroeth	ane	ND	0.16	2.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
Chlorofor	n	ND	0.40	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
Chlorome	thane	ND	0.29	3.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
2-Chloroto	bluene	ND	0.40	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
4-Chioroto			0.40	1.0		µg/∟ ug/l	1	8/9/2018 5:15:00 PM	R53334		
cis 1 2 Di			0.30	1.0		µg/∟ ug/l	1	8/9/2018 5:15:00 PM	R00004		
1 2-Dibror	mo-3-chloropropane		0.30	2.0		µg/L µg/l	1	8/9/2018 5:15:00 PM	R53334		
Dibromoc	hloromethane	ND	0.24	1.0		µg/⊏ ua/l	1	8/9/2018 5:15:00 PM	R53334		
Dibromon	nethane	ND	0.32	1.0		µg/= ua/L	1	8/9/2018 5:15:00 PM	R53334		
1,2-Dichlo	probenzene	ND	0.31	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
1,3-Dichlo	probenzene	ND	0.31	1.0		μg/L	1	8/9/2018 5:15:00 PM	R53334		
1,4-Dichlo	probenzene	ND	0.40	1.0		μg/L	1	8/9/2018 5:15:00 PM	R53334		
Dichlorod	ifluoromethane	ND	1.0	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
1,1-Dichlo	proethane	ND	0.40	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
1,1-Dichloroethene		ND	0.12	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
1,2-Dichlo	propropane	ND	0.15	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
1,3-Dichlo	propropane	ND	0.27	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		
2,2-Dichlo	propropane	ND	0.18	2.0		µg/L	1	8/9/2018 5:15:00 PM	R53334		

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

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
- PQL Practical Quanitative Limit
- 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 Page 19 of 39
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

Lab Order 1808322

Date Reported: 9/13/2018

CLIENT: Andeavor Bloomfield Project: Cross Gradient Wells/Down Grad	Client Sample ID: Trip Blank Collection Date:										
Lab ID: 1808322-005	Matrix: A	AQUEOUS	Received Date: 8/7/2018 7:00:00 AM								
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID			
EPA METHOD 8260B: VOLATILES							Analyst: RA	A			
1,1-Dichloropropene	ND	0.16	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
Hexachlorobutadiene	ND	0.80	1.0		μg/L	1	8/9/2018 5:15:00 PM	R53334			
2-Hexanone	ND	0.91	10		μg/L	1	8/9/2018 5:15:00 PM	R53334			
Isopropylbenzene	ND	0.22	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
4-Isopropyltoluene	ND	0.24	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
4-Methyl-2-pentanone	ND	0.45	10		µg/L	1	8/9/2018 5:15:00 PM	R53334			
Methylene Chloride	ND	0.21	3.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
n-Butylbenzene	ND	0.25	3.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
n-Propylbenzene	ND	0.24	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
sec-Butylbenzene	ND	0.20	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
Styrene	ND	0.25	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
tert-Butylbenzene	ND	0.22	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
1,1,1,2-Tetrachloroethane	ND	0.25	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
1,1,2,2-Tetrachloroethane	ND	0.33	2.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
trans-1,2-DCE	ND	0.18	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
trans-1,3-Dichloropropene	ND	0.28	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
1,2,3-Trichlorobenzene	ND	0.28	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
1,2,4-Trichlorobenzene	ND	0.27	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
1,1,1-Trichloroethane	ND	0.15	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
1,1,2-Trichloroethane	ND	0.23	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
Trichloroethene (TCE)	ND	0.26	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
Trichlorofluoromethane	ND	0.17	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
1,2,3-Trichloropropane	ND	0.57	2.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
Vinyl chloride	ND	0.11	1.0		µg/L	1	8/9/2018 5:15:00 PM	R53334			
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/9/2018 5:15:00 PM	R53334			
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	8/9/2018 5:15:00 PM	R53334			
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	8/9/2018 5:15:00 PM	R53334			
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	8/9/2018 5:15:00 PM	R53334			
Surr: Toluene-d8	93.4	0	70-130		%Rec	1	8/9/2018 5:15:00 PM	R53334			
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG				
Gasoline Range Organics (GRO)	0.026	0.0097	0.050	J	mg/L	1	8/16/2018 4:22:15 PN	A53492			
Surr: BFB	104	0	70-130		%Rec	1	8/16/2018 4:22:15 PN	A53492			

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	3 Analyte detected in the associated Method Blank			
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range			
	Н	Holding times for preparation or analysis exceeded		Analyte detected below quantitation limits Pa	age 20 of 39		
	ND Not Detected at the Reporting Limit		Р	Sample pH Not In Range			
	PQL	Practical Quanitative Limit	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.

WO#:	1808322

Client: Project:	Andeavo Cross G	or Bloomfie radient Wel	eld lls/Dow	n Gradient	Wells							
Sample ID	MB	SampT	ype: MI	BLK	Test	tCode: El	PA Method	300.0: Anion	5			
Client ID:	PBW	Batch	n ID: R5	3321	RunNo: <b>53321</b>							
Prep Date:		Analysis Date: 8/8/2018			SeqNo: 1755517			Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Fluoride		ND	0.10									
Chloride		ND	0.50									
Bromide		ND	0.10									
Phosphorus, O	rthophosphate (As P	ND	0.50									
Sulfate		ND	0.50									
Sample ID LCS SampType: LCS					Test	TestCode: EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID: R53321			R	unNo: 5	3321					
Prep Date:		Analysis Date: 8/8/2018			S	eqNo: 1	755518	Units: <b>mg/L</b>				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Fluoride		0.53	0.10	0.5000	0	106	90	110				
Chloride		4.7	0.50	5.000	0	93.8	90	110				
Bromide		2.4	0.10	2.500	0	95.8	90	110				
Phosphorus, O	rthophosphate (As P	4.7	0.50	5.000	0	93.6	90	110				
Sulfate		9.2	0.50	10.00	0	92.3	90	110				
Sample ID	MB	SampT	ype: <b>ml</b>	olk	TestCode: EPA Method 300.0: Anions							
Client ID:	PBW	Batch	n ID: <b>R5</b>	3575	R	unNo: 5	3575					
Prep Date:		Analysis D	)ate: <b>8/</b>	20/2018	S	eqNo: 1	766164	Units: <b>mg/L</b>				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrate+Nitrite a	as N	ND	0.20									
Sample ID	LCS	SampT	ype: Ics	5	Test	tCode: El	PA Method	300.0: Anion	5			
Client ID:	LCSW	Batch	n ID: <b>R5</b>	3575	R	unNo: 5	3575					
Prep Date:		Analysis D	)ate: <b>8/</b>	20/2018	S	eqNo: 1	766165	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrate+Nitrite a	as N	3.3	0.20	3.500	0	93.2	90	110				
Sample ID	MB	SampT	ype: ml	olk	Test	tCode: El	PA Method	300.0: Anion	5			
Client ID:	PBW	Batch	n ID: <b>A5</b>	3575	R	unNo: 5	3575					
Prep Date:		Analysis D	)ate: <b>8</b> /	20/2018	S	eqNo: 1	766204	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrate+Nitrite a	as N	ND	0.20									

#### **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
- PQL Practical Quanitative Limit
- 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

Page 21 of 39

WO#:	1808322
	13-Sep-18

Client: Project:	Andeavor Bloomfield Cross Gradient Wells/Down Gradient Wells								
Sample ID         LCS         SampType:         Ics         TestCode:         EPA Method 300.0:         Anions									
Client ID: LCSW	Batch ID:	A53575	F	RunNo: 5	3575				
Prep Date:	Analysis Date:	Analysis Date: 8/20/2018 SeqNo: 1766205			766205	Units: mg/L			
Analyte	Result PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.3 0	.20 3.500	0	95.3	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
- PQL Practical Quanitative Limit
- 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
- Page 22 of 39

WO#:	1808322
	12 0 10

Client: Andeavo Project: Cross Gr	or Bloomfiel adient Well	d s/Dow	n Gradient	Wells							
Sample ID MB-39667	SampType: MBLK			Tes	tCode: E	l Range					
Client ID: PBW	Batch	Batch ID: 39667 RunNo:			unNo: 5	D: <b>53283</b>					
Prep Date: 8/8/2018	Analysis Da	ate: <b>8/</b>	9/2018	S	eqNo: 1	756124	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	0.40									
Motor Oil Range Organics (MRO)	ND	2.5									
Surr: DNOP	0.39		0.5000		78.8	76.6	135				
Sample ID LCS-39667	SampTy	/pe: LC	S	Tes	tCode: E	PA Method	8015D: Diese	l Range			
Client ID: LCSW	Batch	ID: 39	667	R	unNo: 5	3283					
Prep Date: 8/8/2018	Analysis Da	ate: <b>8/</b>	9/2018	S	eqNo: 1	756125	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	2.3	0.40	2.500	0	93.3	76.5	158				
Surr: DNOP	0.16		0.2500		66.0	76.6	135			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
- PQL Practical Quanitative Limit
- 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

Page 23 of 39

WO#: **1808322** 

13-Sep-18

Client: A Project: C	ndeavor Bloomfie ross Gradient We	eld lls/Dow	n Gradient	Wells						
Sample ID 100ng Ics	SampT	Гуре: <b>LC</b>	s	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: LCSW	Batcl	h ID: <b>R5</b>	3334	F	RunNo: 5	3334				
Prep Date:	Analysis E	Date: 8/	9/2018	ŝ	SeqNo: 1	755929	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	98.9	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	110	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.7	70	130			
Surr: 1,2-Dichloroethane-o	d4 10		10.00		104	70	130			
Surr: 4-Bromofluorobenze	ne 10		10.00		102	70	130			
Surr: Dibromofluorometha	ne 10		10.00		100	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			
Sample ID RB	SampT	Type: ME	BLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batcl	h ID: R5	3334	F	RunNo: 5	3334				
Prep Date:	Analysis D	Date: 8/	9/2018	5	SeqNo: 1	755932	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 (MTBI	E) 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
- PQL Practical Quanitative Limit
- 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

Page 24 of 39

WO#: 1808322

13-	Se	p-1	18

Client: Ar	deavor Bloomfie	eld							
Project: Cr	oss Gradient We	lls/Down Gradient	t Wells						
Sample ID RB	Samp	Type: <b>MBLK</b>	Tes	stCode: E	EPA Method	8260B: VOL	ATILES		
Client ID: PBW	Batc	h ID: <b>R53334</b>		RunNo:	53334				
Prep Date:	Analysis [	Date: 8/9/2018		SeqNo:	1755932	Units: µg/L			
Analyte	Result	PQL SPK value	e 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	e 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	1.4	10							J
Methylene Chloride	ND	3.0							
n-Butylbenzene	ND	3.0							
n-Propylbenzene	ND	1.0							
sec-Butvlbenzene	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 (PCF)	ND	1.0							
trans-1.2-DCF	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		1.0							
1 1 2-Trichloroethane		1.0							
		1.0							
		1.0							
		2.0							
r,z,s-menioropropane	UN	2.0							

#### **Qualifiers:**

- Value exceeds Maximum Contaminant Level. \*
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH Not In Range Р
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Page 25 of 39

WO#:	1808322

Client: Project:	Andeavor Bloomfi Cross Gradient We	eld ells/Dow	n Gradient	Wells						
Sample ID RB	Samp	Type: ME	3LK	Test	Code: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Bato	h ID: R5	3334	RunNo: 53334						
Prep Date:	Analysis I	Date: 8/	9/2018	S	eqNo: 1	755932	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-Dichloroetha	ne-d4 10		10.00		103	70	130			
Surr: 4-Bromofluorobe	nzene 10		10.00		101	70	130			
Surr: Dibromofluorome	ethane 10		10.00		99.9	70	130			
Surr: Toluene-d8	9.3		10.00		93.3	70	130			
Sample ID 100ng	l <b>cs</b> Samp	Type: LC	s	Test	Code: El	PA Method	8260B: VOL	ATILES		
Client ID: LCSW	Bato	h ID: R5	3350	R	unNo: 5	3350				
Prep Date:	Analysis I	Date: 8/	10/2018	S	eqNo: 1	757254	Units: %Re	;		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroetha	ne-d4 10		10.00		102	70	130			
Surr: 4-Bromofluorobe	nzene 11		10.00		106	70	130			
Surr: Dibromofluorome	ethane 10		10.00		103	70	130			
Surr: Toluene-d8	9.4		10.00		94.5	70	130			
Sample ID rb	Samp	Type: ME	BLK	Test	Code: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Bato	h ID: <b>R5</b>	3350	R	unNo: 5	3350				
Prep Date:	Analysis I	Date: <b>8/</b>	10/2018	S	eqNo: 1	757255	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-Dichloroetha	ne-d4 10		10.00		102	70	130			
Surr: 4-Bromofluorobe	nzene 11		10.00		105	70	130			
Surr: Dibromofluorome	ethane 10		10.00		104	70	130			
Surr: Toluene-d8	9.2		10.00		91.8	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
- PQL Practical Quanitative Limit
- 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

Page 26 of 39

WO#: **1808322** 

13-Sep-18

Client: A Project: C	ndeavor Bloomfi ross Gradient We	eld lls/Dow	n Gradient	Wells						
Sample ID mb-39686	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8270C: Semiv	volatiles		
Client ID: PBW	Batc	h ID: 39	686	F	RunNo: 5	3401				
Prep Date: 8/9/2018	Analysis [	Date: 8/	13/2018	S	SeqNo: 1	758611	Units: µg/L			
Analvte	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	7.4	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	ND	10								
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	ND	10								
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 <sup>-</sup> 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								

#### **Qualifiers:**

2,4-Dinitrophenol

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

ND

20

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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

Page 27 of 39

Client:AndeavProject:Cross G	or Bloomfiel Gradient Well	d s/Down Gradient	Wells				
Sample ID mb-39686	SampT	vpe: MBLK	TestCode:	EPA Method	8270C: Semivo	latiles	
Client ID: <b>PBW</b>	Batch	ID: 39686	RunNo:	53401			
		nb. 33000	Sector	4750644			
Prep Date. 0/9/2010	Analysis Da	ale. 6/13/2016	Sequo.	1/30011	υπις: <b>μg/</b> L		
Analyte	Result	PQL SPK value	SPK Ref Val %REC	C LowLimit	HighLimit	%RPD RPDLim	it 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					
1,2,4-1 richlorobenzene	ND	10					
2,4,5-1 richlorophenol	ND	10					
2,4,6- I richiorophenol	ND	10	10	4 45	744		
Surr: 2-Fluorophenol	98	200.0	49.1	1 15	74.1		
Surr: Pnenol-a5	84	200.0	41.9	y 15	59.8		
	120	200.0	60.4	+ 22.1	112		
Surr: Nitrobenzene-05	65	100.0	64.0	o 33.2	94		
Surr: 2-Fluoropiphenyi	62	100.0	62.	i 34	90.9		
Surr: 4-Terphenyl-d14	71	100.0	71.3	3 15	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
- PQL Practical Quanitative Limit
- 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

Page 28 of 39

1808322

#### **Client:** Andeavor Bloomfield

**Project:** Cross Gradient Wells/Down Gradient Wells

Sample ID Icsd-39686	SampType: LCSD TestCode: EPA Method 8270C: Semivolatiles									
Client ID: LCSS02	Batc	h ID: 39	686	F	RunNo: 5	3401				
Prep Date: 8/9/2018	Analysis E	Date: <b>8/</b>	13/2018	S	SeqNo: 1	758613	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	84	10	100.0	0	84.1	55.1	104	2.29	34.9	
4-Chloro-3-methylphenol	190	10	200.0	0	94.5	57	115	11.7	30.2	
2-Chlorophenol	180	10	200.0	0	87.5	43.4	112	12.2	49.5	
1,4-Dichlorobenzene	69	10	100.0	0	69.0	38	95.2	1.49	43.2	
2,4-Dinitrotoluene	72	10	100.0	0	72.2	55.1	96.7	10.1	49.9	
N-Nitrosodi-n-propylamine	100	10	100.0	0	103	55	112	8.49	42.1	
4-Nitrophenol	97	10	200.0	0	48.6	16.6	93	102	31.5	R
Pentachlorophenol	140	20	200.0	0	67.6	43.2	104	59.9	52.5	R
Phenol	110	10	200.0	0	56.3	21.3	85.7	12.7	54.4	
Pyrene	86	10	100.0	0	86.0	64.9	105	9.40	30.7	
1,2,4-Trichlorobenzene	78	10	100.0	0	77.6	42.6	107	2.90	48.1	
Surr: 2-Fluorophenol	130		200.0		64.0	15	74.1	0	0	
Surr: Phenol-d5	110		200.0		55.1	15	59.8	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		75.4	22.1	112	0	0	
Surr: Nitrobenzene-d5	87		100.0		86.8	33.2	94	0	0	
Surr: 2-Fluorobiphenyl	77		100.0		77.3	34	90.9	0	0	
Surr: 4-Terphenyl-d14	90		100.0		89.9	15	149	0	0	
								•	-	
Sample ID Ics-39686	Samp	Гуре: <b>LC</b>	S	Tes	tCode: El	PA Method	8270C: Semi	volatiles		
Sample ID Ics-39686 Client ID: LCSW	Samp] Batc	Гуре: <b>LC</b> h ID: <b>39</b>	S 686	Tes F	tCode: El	PA Method 3401	8270C: Semi	volatiles		
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018	Samp] Batc Analysis [	Гуре: <b>LC</b> h ID: <b>39</b> Date: <b>8</b> /	S 686 13/2018	Tes F S	tCode: El RunNo: 5 SeqNo: 1	PA Method 3401 758614	8270C: Semi Units: μg/L	volatiles		
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte	Samp] Batc Analysis I Result	Гуре: <b>LC</b> h ID: <b>39</b> Date: <b>8/</b> PQL	S 586 13/2018 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 3401 758614 LowLimit	8270C: Semi Units: µg/L HighLimit	volatiles %RPD	RPDLimit	Qual
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene	Samp Batc Analysis I Result 82	Type: <b>LC</b> h ID: <b>39</b> Date: <b>8/</b> PQL 10	<b>S</b> 686 13/2018 SPK value 100.0	Tes F SPK Ref Val 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2	PA Method 3401 758614 LowLimit 55.1	8270C: Semi Units: µg/L HighLimit 104	volatiles %RPD	RPDLimit	Qual
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol	Samp Batc Analysis E Result 82 170	Type: <b>LC</b> h ID: <b>39</b> Date: <b>8</b> / PQL 10 10	<b>S</b> 586 13/2018 SPK value 100.0 200.0	Tes F SPK Ref Val 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1	PA Method 3401 758614 LowLimit 55.1 57	8270C: Semi Units: µg/L HighLimit 104 115	volatiles %RPD	RPDLimit	Qual
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol	Samp Batc Analysis D Result 82 170 150	Гуре: <b>LC</b> h ID: <b>39</b> Date: <b>8/</b> PQL 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0	Tes F SPK Ref Val 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5	PA Method 3401 758614 LowLimit 55.1 57 43.4	8270C: Semi Units: μg/L HighLimit 104 115 112	volatiles %RPD	RPDLimit	Qual
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene	Samp Batc Analysis I Result 82 170 150 68	Type: <b>LC</b> h ID: <b>39</b> Date: <b>8/</b> PQL 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0	Tes F SPK Ref Val 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0	PA Method 3401 758614 LowLimit 55.1 57 43.4 38	8270C: Semi Units: μg/L HighLimit 104 115 112 95.2	volatiles %RPD	RPDLimit	Qual
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene	Samp Batc Analysis I Result 82 170 150 68 65	Type: <b>LC</b> h ID: <b>39</b> Date: <b>8/</b> PQL 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0	Tes F SPK Ref Val 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1	8270C: Semi Units: μg/L HighLimit 104 115 112 95.2 96.7	volatiles %RPD	RPDLimit	Qual
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine	Samp Batc Analysis I Result 82 170 150 68 65 94	Type: <b>LC</b> h ID: <b>39</b> Date: <b>8/</b> PQL 10 10 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 100.0	Tes F SPK Ref Val 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55	8270C: Semi Units: μg/L HighLimit 104 115 112 95.2 96.7 112	volatiles %RPD	RPDLimit	Qual
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol	Samp Batc Analysis I Result 82 170 150 68 65 94 32	Type: <b>LC</b> h ID: <b>39</b> Date: <b>8/</b> PQL 10 10 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 100.0 200.0	Tes F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6	8270C: Semi Units: µg/L HighLimit 104 115 112 95.2 96.7 112 93	%RPD	RPDLimit	Qual
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol	Samp Batc Analysis I Result 82 170 150 68 65 94 32 73	Type: <b>LC</b> h ID: <b>39</b> Date: <b>8/</b> PQL 10 10 10 10 10 10 10 20	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 200.0 200.0	Tes F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2	8270C: Semi Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104	%RPD	RPDLimit	Qual S S
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol	Samp Batc Analysis I Result 82 170 150 68 65 94 32 73 99	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 10 10 20 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 200.0 200.0 200.0	Tes F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3	8270C: Semi Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7	volatiles %RPD	RPDLimit	Qual S S
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene	Samp Batc Analysis I Result 82 170 150 68 65 94 32 73 99 78	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 20 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 200.0 200.0 200.0 200.0 200.0 100.0	Tes F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9	8270C: Semi Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105	volatiles %RPD	RPDLimit	Qual S S
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene 1,2,4-Trichlorobenzene	Samp Batc Analysis I Result 82 170 150 68 65 94 32 73 99 78 78 75	Type: LC h ID: 39 Date: 8/ PQL 10 10 10 10 10 10 10 20 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 100.0 200.0 200.0 200.0 200.0 200.0 100.0 100.0	Tes F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3 75.4	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9 42.6	8270C: Semin Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105 107	volatiles %RPD	RPDLimit	Qual S S
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene 1,2,4-Trichlorobenzene Surr: 2-Fluorophenol	Samp Batc Analysis I Result 82 170 150 68 65 94 32 73 99 78 75 110	Type: <b>LC</b> h ID: <b>39</b> Date: <b>8</b> / PQL 10 10 10 10 10 10 20 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 200.0 200.0 200.0 200.0 200.0 100.0 100.0 200.0	Tes F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3 75.4 53.7	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9 42.6 15	8270C: Semir Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105 107 74.1	volatiles %RPD	RPDLimit	Qual S S
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene 1,2,4-Trichlorobenzene Surr: 2-Fluorophenol Surr: Phenol-d5	Samp Batc Analysis I Result 82 170 150 68 65 94 32 73 99 78 75 110 100	Type: LC h ID: 39 Date: 8/ PQL 10 10 10 10 10 10 10 20 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 200.0 200.0 200.0 200.0 200.0 100.0 100.0 200.0 200.0 200.0	Tes 5 5 5 5 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3 75.4 53.7 49.9	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9 42.6 15 15	8270C: Semir Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105 107 74.1 59.8	volatiles %RPD	RPDLimit	Qual S S
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Pyrene 1,2,4-Trichlorobenzene Surr: 2-Fluorophenol Surr: Phenol-d5 Surr: 2,4,6-Tribromophenol	Samp Batc Analysis I Result 82 170 150 68 65 94 32 73 99 78 75 110 100 140	Type: <b>LC</b> h ID: <b>39</b> Date: <b>8</b> / PQL 10 10 10 10 10 10 20 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 200.0 200.0 200.0 200.0 100.0 200.0 200.0 200.0 200.0 200.0	Tes F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3 75.4 53.7 49.9 68.2	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9 42.6 15 15 22.1	8270C: Semir Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105 107 74.1 59.8 112	volatiles %RPD	RPDLimit	Qual S S
Sample ID Ics-39686 Client ID: LCSW Prep Date: 8/9/2018 Analyte Acenaphthene 4-Chloro-3-methylphenol 2-Chlorophenol 1,4-Dichlorobenzene 2,4-Dinitrotoluene N-Nitrosodi-n-propylamine 4-Nitrophenol Pentachlorophenol Phenol Phenol Phenol Pyrene 1,2,4-Trichlorobenzene Surr: 2-Fluorophenol Surr: Phenol-d5 Surr: 2,4,6-Tribromophenol Surr: Nitrobenzene-d5	Samp Batc Analysis I Result 82 170 150 68 65 94 32 73 99 78 75 110 100 140 80	Type: LC h ID: 390 Date: 8/ PQL 10 10 10 10 10 10 10 10 10 10 10	S 586 13/2018 SPK value 100.0 200.0 200.0 100.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0 200.0	Tes F SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tCode: El RunNo: 5 GeqNo: 1 %REC 82.2 84.1 77.5 68.0 65.3 94.3 15.9 36.4 49.5 78.3 75.4 53.7 49.9 68.2 80.2	PA Method 3401 758614 LowLimit 55.1 57 43.4 38 55.1 55 16.6 43.2 21.3 64.9 42.6 15 15 22.1 33.2	8270C: Semir Units: μg/L HighLimit 104 115 112 95.2 96.7 112 93 104 85.7 105 107 74.1 59.8 112 94	volatiles %RPD	RPDLimit	Qual S S

#### **Qualifiers:**

- Value exceeds Maximum Contaminant Level. \*
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit PQL
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 29 of 39

WO#:

13-Sep-18

WO#:	1808322
	13-Sep-18

Client: Project:		Andeavor B1 Cross Gradie	oomfiel ent Well	d s/Dow	vn Gradient	Wells						
Sample ID	lcs-3968	6	SampT	/pe: <b>L(</b>	cs	Tes	tCode: E	PA Method	8270C: Semi	volatiles		
Client ID:	LCSW		Batch	ID: 39	9686	R	anNo:	53401				
Prep Date:	8/9/201	<b>8</b> An	alysis Da	ate: <b>8</b>	/13/2018	S	SeqNo: '	1758614	Units: µg/L			
Analyte		R	tesult	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terp	henyl-d14		87		100.0		86.5	15	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
- PQL Practical Quanitative Limit
- 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
- Page 30 of 39

WO#:	1808322
	13-Sep-18

Client: Project:	Andeavor Cross Gra	r Bloomfiel adient Well	ld ls/Dow	n Gradient	Wells						
Sample ID	MB-39964	SampTy	ype: ME	BLK	Test	Code: El	PA Method	7470: Mercur	у		
Client ID:	PBW	Batch	ID: 39	964	R	unNo: 5	3674				
Prep Date:	8/23/2018	Analysis Da	ate: <b>8/</b>	23/2018	S	eqNo: 1	770047	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	(	0.000078 0.	.00020								J
Sample ID	LCS-39964	SampTy	ype: LC	S	Test	Code: El	PA Method	7470: Mercur	у		
Client ID:	LCSW	Batch	ID: 39	964	R	unNo: 5	3674				
Prep Date:	8/23/2018	Analysis Da	ate: <b>8/</b>	23/2018	S	eqNo: 1	770048	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0050 0.	.00020	0.005000	0	100	80	120			
Sample ID	1808322-001DMS	SampTy	ype: <b>MS</b>	6	Test	Code: El	PA Method	7470: Mercur	у		
Client ID:	MW-1	Batch	ID: 39	964	R	unNo: 5	3674				
Prep Date:	8/23/2018	Analysis Da	ate: <b>8/</b>	23/2018	S	eqNo: 1	770050	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0052 0.	.00020	0.005000	.00008288	103	75	125			
Sample ID	1808322-001DMS	D SampTy	ype: <b>MS</b>	SD	Test	Code: El	PA Method	7470: Mercur	у		
Client ID:	MW-1	Batch	ID: 39	964	R	unNo: 5	3674				
Prep Date:	8/23/2018	Analysis Da	ate: <b>8/</b>	23/2018	S	eqNo: 1	770051	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0053 0.	.00020	0.005000	.00008288	105	75	125	1.36	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
- PQL Practical Quanitative Limit
- 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
- Page 31 of 39

WO#: 1808322 13-Sep-18

Client: Project:		Andeavor Bloomfi Cross Gradient We	eld ells/Dow	n Gradient	Wells						
Sample ID	MB-A	Samp	Type: MI	BLK	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Bato	ch ID: A5	3550	F	RunNo: 5	3550				
Prep Date:		Analysis	Date: 8/	20/2018	S	SeqNo: 1	765751	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		ND	0.020								
Cadmium		ND	0.0020								
Calcium		ND	1.0								
Chromium		ND	0.0060								
Copper		ND	0.0060								
Iron		ND	0.020								
Magnesium		ND	1.0								
Manganese		ND	0.0020								
Potassium		ND	1.0								
Selenium		ND	0.050								
Silver		ND	0.0050								
Sodium		ND	1.0								
Uranium		ND	0.10								
Zinc		ND	0.020								
Sample ID	LCS-A	Samp	Type: LC	s	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Bate	ch ID: A5	3550	F	RunNo: <b>53550</b>					
Prep Date:		Analysis	Date: 8/	/20/2018	S	SeqNo: 1	765753	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.51	0.020	0.5000	0	103	80	120			
Cadmium		0.50	0.0020	0.5000	0	99.9	80	120			
Calcium		49	1.0	50.00	0	97.1	80	120			
Chromium		0.51	0.0060	0.5000	0	102	80	120			
Copper		0.50	0.0060	0.5000	0	100	80	120			
Iron		0.50	0.020	0.5000	0	101	80	120			
Magnesium		50	1.0	50.00	0	99.4	80	120			
Manganese		0.50	0.0020	0.5000	0	101	80	120			
Potassium		49	1.0	50.00	0	97.3	80	120			
Selenium		0.50	0.050	0.5000	0	99.8	80	120			
SIIVEr		0.10	0.0050	0.1000	0	105	80	120			
Socium		50	1.0	0.00	0	99.9	80	120			
Zinc		0.46	0.10	0.5000	0	91.3 102	80 80	120			
			-		_						
Sample ID	MB-B	Samp	iype: MI	BLK	Tes	tCode: E	PA Method	6010B: Disso	Ived Meta	als	
Client ID:	PRM	Analysis	n ID: B5	0355U /20/2019	F c	CUNINO: 5	335U 766579	I Inits: ma/l			
		Analysis							0/ 00		Quel
Analyte		Result	PQL	SPR Value	SPK Kei val	%REU	LOWLIMIT	FignLimit	%ΚΡυ	KPULIMI	Qual
Qualifiers:											

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank

Е Value above quantitation range

- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 32 of 39

Client: Project:		Andeavor Bloomfield Cross Gradient Wells	d s/Dow	n Gradient	Wells						
Sample ID	MB-B	SampTy	pe: <b>M</b> E	BLK	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batch	ID: <b>B5</b>	3550	F	RunNo: 5	3550				
Prep Date:		Analysis Da	te: <b>8/</b>	20/2018	S	SeqNo: 1	766579	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		ND (	0.0050								
Sample ID	LCS-B	SampTy	pe: LC	s	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Batch	ID: <b>B5</b>	3550	F	RunNo: 5	3550				
Prep Date:		Analysis Da	te: <b>8/</b>	20/2018	S	SeqNo: 1	766581	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		0.50 (	0.0050	0.5000	0	99.6	80	120			
Sample ID	MB-A	SampTy	pe: ME	BLK	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batch	ID: <b>A5</b>	3717	F	RunNo: 5	3717				
Prep Date:		Analysis Da	te: <b>8/</b>	27/2018	S	SeqNo: 1	772819	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	0.020								
Selenium		ND	0.050								
Sample ID	LCS-A	SampTy	pe: LC	s	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Batch	ID: <b>A5</b>	3717	F	RunNo: 5	3717				
Prep Date:		Analysis Da	te: <b>8/</b>	27/2018	S	SeqNo: 1	772821	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.47	0.020	0.5000	0	93.2	80	120			
Selenium		0.46	0.050	0.5000	0	92.6	80	120			
Sample ID	MB-A	SampTy	pe: <b>ME</b>	BLK	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batch	ID: <b>A5</b>	4000	F	RunNo: 5	4000				
Prep Date:		Analysis Da	te: 9/	7/2018	S	SeqNo: 1	783545	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	0.020								
Sodium		ND	1.0								
Sample ID	LCS-A	SampTy	pe: LC	s	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Batch	ID: <b>A5</b>	4000	F	RunNo: 5	4000				
Prep Date:		Analysis Da	te: 9/	7/2018	S	SeqNo: 1	783547	Units: mg/L			
-											
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Analyte Arsenic		Result 0.50	PQL 0.020	SPK value 0.5000	SPK Ref Val 0	%REC 99.4	LowLimit 80	HighLimit 120	%RPD	RPDLimit	Qual

#### **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

PQL Practical Quanitative Limit

- 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

Page 33 of 39

WO#:	1808322

Client: Project:	Andeavor Cross Gra	r Bloomfi adient We	ield ells/Dow	n Gradient	Wells							
Sample ID	MB-39664	Samp	Type: ME	BLK	Tes	tCode: E	PA 6010B: '	Total Recove	rable Meta	als		
Client ID:	PBW	Bate	ch ID: 39	664	F	RunNo: 5	3393					
Prep Date:	8/8/2018	Analysis	Date: 8/	13/2018	S	SeqNo: 1	758343	Units: <b>mg/L</b>				
Analyte		Result	PQI	SPK value	SPK Ref Val	%RFC	l owl imit	Highl imit	%RPD	RPDI imit	Qual	
Barium		ND	0.020	0.11.10.00	0	,			, or a - D		4.00.	
Cadmium		ND	0.0020									
Chromium		ND	0.0060									
Lead		0.0055	0.0050									
Selenium		ND	0.050									
Silver		ND	0.0050									
Sample ID	LCS-39664	Samp	Type: LC	S	TestCode: EPA 6010B: Total Recoverable Metals							
Client ID:	LCSW	Bate	ch ID: 39	664	F	RunNo: 5	3393					
Prep Date:	8/8/2018	Analysis	Date: 8/	13/2018	S	SeqNo: 1	758345	Units: <b>mg/L</b>				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium		0.51	0.020	0.5000	0	101	80	120				
Cadmium		0.51	0.0020	0.5000	0	102	80	120				
Chromium		0.49	0.0060	0.5000	0	97.3	80	120			_	
Lead		0.50	0.0050	0.5000	0	99.9	80	120			В	
Selenium		0.48	0.050	0.5000	0	96.9	80	120				
Silver		0.10	0.0050	0.1000	0	100	80	120				
Sample ID	1808322-001DMS	Samp	Type: MS	6	TestCode: EPA 6010B: Total Recoverable Metals							
Client ID:	MW-1	Bate	ch ID: 39	664	RunNo: <b>53393</b>							
Prep Date:	8/8/2018	Analysis	Date: 8/	13/2018	S	SeqNo: 1	758364	Units: <b>mg/L</b>				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium		0.64	0.020	0.5000	0.1340	102	75	125				
Cadmium		0.51	0.0020	0.5000	0	102	75	125				
Chromium		0.49	0.0060	0.5000	0	97.2	75	125				
Selenium		0.49	0.050	0.5000	0	98.9	/5 75	125				
Silver		0.10	0.0050	0.1000	0	103	75	125				
Sample ID	1808322-001DMSI	D Samp	Type: MS	SD	Tes	tCode: E	PA 6010B:	Total Recover	rable Meta	als		
Client ID:	MW-1	Bate	ch ID: 39	664	F	RunNo: 5	3393					
Prep Date:	8/8/2018	Analysis	Date: 8/	13/2018	S	SeqNo: 1	758365	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium		0.64	0.020	0.5000	0.1340	101	75	125	0.383	20		
Cadmium		0.51	0.0020	0.5000	0	102	75	125	0.0449	20		
Chromium		0.48	0.0060	0.5000	0	96.5	75 —	125	0.683	20		
Selenium		0.47	0.050	0.5000	0	93.3	75 —	125	5.80	20		
Silver		0.10	0.0050	0.1000	0	105	75	125	1.60	20		
<b>Oualifiers:</b>												

- \* 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
- PQL Practical Quanitative Limit
- 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

Page 34 of 39

WO#:	1808322
	13-Sep-18

Client: Project:	Andeavo Cross Gr	r Bloomfie adient We	eld lls/Dov	wn Gradient	Wells						
Sample ID	MB-39664	Samp	Гуре: 🛚	IBLK	Tes	tCode: El	PA 6010B: 1	Total Recover	able Meta	als	
Client ID:	PBW	Batc	h ID: 3	9664	F	RunNo: 5	3393				
Prep Date:	8/8/2018	Analysis [	Date:	8/13/2018	5	SeqNo: 1	758431	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	0.020	0							
Sample ID	LCS-39664	Samp	Гуре: L	.CS	Tes	tCode: El	PA 6010B: 1	Fotal Recover	able Meta	als	
Client ID:	LCSW	Batc	h ID: 3	9664	RunNo: <b>53393</b>						
Prep Date:	8/8/2018	Analysis [	Date:	8/13/2018	5	SeqNo: 1	758433	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.50	0.020	0.5000	0	99.3	80	120			
Sample ID	1808322-001DMS	Samp	Гуре: 🛚	IS	Tes	tCode: El	PA 6010B: 1	Total Recover	able Meta	als	
Client ID:	MW-1	Batc	h ID: 3	9664	F	RunNo: 5	3393				
Prep Date:	8/8/2018	Analysis [	Date:	8/13/2018	S	SeqNo: 1	758464	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.51	0.020	0.5000	0	103	75	125			
Sample ID	1808322-001DMS	D Samp	Гуре: 🛚	ISD	Tes	tCode: El	PA 6010B: 1	Total Recover	able Meta	als	
Client ID:	MW-1	Batc	h ID: 3	9664	F	RunNo: <b>5</b>	3393				
Prep Date:	8/8/2018	Analysis [	Date:	8/13/2018	S	SeqNo: 1	758465	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.49	0.020	0.5000	0	98.9	75	125	3.85	20	
Sample ID	MB-39664	Samp	Гуре: 🛚	IBLK	Tes	tCode: El	PA 6010B: 1	Total Recover	able Meta	als	
Client ID:	PBW	Batc	h ID: 3	9664	F	RunNo: 5	3387				
Prep Date:	8/8/2018	Analysis [	Date:	8/13/2018	5	SeqNo: 1	759158	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		ND	0.005	0							
Sample ID	LCS-39664	Samp	Гуре: L	.CS	Tes	tCode: El	PA 6010B: 1	Total Recover	able Meta	als	
Client ID:	LCSW	Batc	h ID: 3	9664	F	RunNo: 5	3387				
Prep Date:	8/8/2018	Analysis [	Date:	8/13/2018	5	SeqNo: 1	759160	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		0.50	0.005	0.5000	0	99.1	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
- PQL Practical Quanitative Limit
- 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
- Page 35 of 39

Batch ID: 39664

Analysis Date: 8/13/2018

PQL

0.0050

0.5000

Result

0.49

Client: Project:	Andeavoi Cross Gra	r Bloomfi adient We	eld ells/Dow	n Gradient	Wells								
Sample ID	1808322-001DMS	Samp	Type: MS	3	Tes	tCode: E	PA 6010B:	Total Recove	rable Meta	als			
Client ID:	MW-1	Bato	h ID: 39	664	RunNo: <b>53387</b>								
Prep Date:	8/8/2018	Analysis I	Date: 8/	13/2018	S	SeqNo: 1	759173	Units: <b>mg/L</b>					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Lead		0.49	0.0050	0.5000	0	97.7	75	125					
Sample ID	1808322-001DMSI	D Samp	Туре: М	SD	Tes	tCode: E	PA 6010B:	Total Recove	rable Meta	als			

RunNo: 53387

98.3

SPK value SPK Ref Val %REC LowLimit

0

SeqNo: 1759174

Units: mg/L

HighLimit

125

75

%RPD

0.578

RPDLimit

20

Qual

#### Qualifiers:

Client ID: MW-1

Analyte

Lead

Prep Date: 8/8/2018

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 36 of 39

WO#:	1808322

Client: Project:	Andeavor Cross Gra	Bloomfie dient Wel	ld ls/Dow	n Gradient	Wells						
Sample ID	1808322-001ams	SampT	ype: M	S	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID:	MW-1	Batch	ID: A5	3492	F	RunNo: 5	3492				
Prep Date:		Analysis D	ate: 8/	/16/2018	S	SeqNo: 1	763272	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	e Organics (GRO)	0.50 9.8	0.050	0.5000 10.00	0.02380	94.6 97.5	63.4 70	130 130			
Sample ID	1808322-001amsd	SampT	уре: М	SD	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID:	MW-1	Batch	ID: A5	3492	F	RunNo: 5	3492				
Prep Date:		Analysis D	ate: 8/	/16/2018	S	SeqNo: 1	763273	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	0.45	0.050	0.5000	0.02380	84.9	63.4	130	10.2	20	
Surr: BFB		9.7		10.00		96.6	70	130	0	0	
Sample ID	2.5ug gro Ics	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID:	LCSW	Batch	ID: A5	3492	F	RunNo: 5	3492				
Prep Date:		Analysis D	ate: 8/	/16/2018	S	SeqNo: 1	763278	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	0.49	0.050	0.5000	0	98.4	70	130			
Surr: BFB		9.5		10.00		94.7	70	130			
Sample ID	rb2	SampT	ype: MI	BLK	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	е	
Client ID:	PBW	Batch	ID: A5	3492	F	RunNo: 5	3492				
Prep Date:		Analysis D	ate: 8/	/16/2018	S	SeqNo: 1	763279	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	0.015	0.050								J
Surr: BFB		10		10.00		103	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
- PQL Practical Quanitative Limit
- 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
- Page 37 of 39

WO#:	1808	8322
	10.0	-

Client: Project:		Andeavor Bloomfield Cross Gradient Wells/D	own Gradient	Wells						
Sample ID	mb-1 all	SampType:	mblk	Test	tCode: SI	M2320B: Al	kalinity			
Client ID:	PBW	Batch ID:	R53305	R	unNo: 5	3305				
Prep Date:		Analysis Date:	8/8/2018	S	eqNo: 1	754671	Units: mg/L	CaCO3		
Analyte		Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	s) ND 20	.00							
Sample ID	lcs-1 all	sampType:	lcs	TestCode: SM2320B: Alkalinity						
Client ID:	LCSW	Batch ID:	R53305	RunNo: <b>53305</b>						
Prep Date:		Analysis Date:	8/8/2018	S	eqNo: 1	754672	Units: mg/L	CaCO3		
Analyte		Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	) 77.72 20	.00 80.00	0	97.2	90	110			
Sample ID	mb-2 all	s SampType:	mblk	Test	tCode: SI	M2320B: AI	kalinity			
Client ID:	PBW	Batch ID:	R53305	R	unNo: 5	3305				
Prep Date:		Analysis Date:	8/8/2018	S	eqNo: 1	754695	Units: mg/L	CaCO3		
Analyte		Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	s) ND 20	.00							
Sample ID	lcs-2 all	s SampType:	lcs	Test	tCode: SI	M2320B: AI	kalinity			
Client ID:	LCSW	Batch ID:	R53305	R	unNo: 5	3305				
Prep Date:		Analysis Date:	8/8/2018	S	eqNo: 1	754696	Units: mg/L	CaCO3		
Analyte		Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	81.16 20	.00 80.00	0	101	90	110			
Sample ID	mb-1 all	SampType:	MBLK	Test	tCode: SI	M2320B: AI	kalinity			
Client ID:	PBW	Batch ID:	R53469	R	unNo: 5	3469				
Prep Date:		Analysis Date:	8/15/2018	S	eqNo: 1	761677	Units: mg/L	CaCO3		
Analyte		Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	s) ND 20	.00							
Sample ID	lcs-1 all	s SampType:	LCS	Test	tCode: SI	M2320B: AI	kalinity			
Client ID:	LCSW	Batch ID:	R53469	R	unNo: 5	3469				
Prep Date:		Analysis Date:	8/15/2018	S	eqNo: 1	761678	Units: mg/L	CaCO3		
Analyte		Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	3) 79.68 20	.00 80.00	0	99.6	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
- PQL Practical Quanitative Limit
- 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
- Page 38 of 39

Client: Project:	Ar Cr	deavor Bloomfield oss Gradient Wells/I	Dow	n Gradient	Wells							
Sample ID	mb-2 alk	SampType	: MI	BLK	Test	tCode: SI	M2320B: AI	kalinity				
Client ID:	PBW	Batch ID	: R5	53469	R	RunNo: 5	3469					
Prep Date: Analysis Date: 8/				/15/2018	/2018 SeqNo: 1761702 Units: mg/L CaCO3							
Analyte		Result P	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity	(as CaCO3)	ND 2	0.00									
Sample ID	lcs-2 alk	SampType	: LC	s	Test	tCode: SI	M2320B: AI	kalinity				
Client ID:	LCSW	Batch ID	: R5	53469	R	anNo: 5	3469					
Prep Date:		Analysis Date	: 8	/15/2018	S	SeqNo: 1	761704	Units: mg/L	CaCO3			
Analyte		Result P	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity	(as CaCO3)	80.20 2	0.00	80.00	0	100	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
- PQL Practical Quanitative Limit
- 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

Page 39 of 39



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: ANDE	AVOR BLOOMFIEL	Work Order Number:	1808322		RcptNo	p: 1
Received By: Anne	Thome	8/7/2018 7:00:00 AM		Anne H.		
Completed By: Anne	Thome 1	8/7/2018 10:29:15 AM		Anne H.		
Reviewed By: ENN	1	01118				
Laberted by,	JAB 08/07/1	8				
<u>Chain of Custody</u>						
1. Is Chain of Custody c	omplete?		Yes 🗹	No	Not Present	
2. How was the sample of	delivered?		<u>Courier</u>			
<u>Log In</u>						
3. Was an attempt made	to cool the samples?		Yes 🗹	No 🗌	NA 🗌	
4. Were all samples rece	ived at a temperature o	of >0° C to 6.0°C	Yes 🗹	No 🗌	NA 🗌	
5. Sample(s) in proper co	ontainer(s)?		Yes 🗹	No 🗌		
6. Sufficient sample volur	ne for indicated test(s)	?	Yes 🗹	No 🗌		
7. Are samples (except V	OA and ONG) properly	preserved?	Yes 🗹	No 🗌		
8. Was preservative adde	d to bottles?		Yes 🗋	No 🗹	NA 🗌	
9. VOA vials have zero he	adspace?		Yes 🗹	No 🗌	No VOA Vials	
0. Were any sample cont	ainers received broken	?	Yes 🗌	No 🗹	# of preserved	
1. Does paperwork match (Note discrepancies on	bottle labels? chain of custody)	·	Yes 🗹	No 🗌	bottles checked for pH:	12 r >12 unless noted)
2. Are matrices correctly i	dentified on Chain of C	ustody?	Yes 🗹	No 🗌	Adjusted?	
3. Is it clear what analyses	s were requested?	Ň	Yes 🔽	No 🗌	•	tAB ack
<ol> <li>Were all holding times a (If no, notify customer for a second seco</li></ol>	able to be met? or authorization.)	Ň	Yes 🗹	No 🗌	Checked by: _<	
pecial Handling (if a	pplicable)					
5. Was client notified of a	II discrepancies with th	is order?	Yes 🗌	No 🗌	NA 🗹	

Date 08/07/18 Allen Mains By Whom: Via: 🗹 eMail 🗌 Phone 🗌 Fax 🗍 In Person zzm:ne our Khina. Regarding: 08/03/18. Buttles rea 08106 e 9 SCIE PAAC 8 Pals **Client Instructions:** 

16. Additional remarks:

### CUSTODY SEALS ON ALL SAMPLE BOTTLES, PER TP 1 REPORT/at 8/7/18

### 17. Cooler Information

	Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
	1	2.4	Good	Yes			
İ	2	1.3	Good	Yes		1	1 - 1

|--|

	_	, ≿							(	N J	р Y)	Air Bubbles							 				ytes.						
7							2 O	iy&C	ini	eXI,	∀	Gen. Chem						×					Anaı						
QF	Z	Ľ		ი					su	oin	∀	mədƏ .nəƏ					X	×					Jet +						
М	ž	2		37109	07					sli	stəN	Dissolved I				×													
· •	Z		ШO	a MN	5-41	st				(∀	ΌΛ·	-im92) 0728							 				DUI						
		2≤	ntal.o	lue,	5-34	sənb					/)	8260B (VO/	×						 _				as a						
	5	s n	nmei	Inerg	20	s Re	S,	bCB	280	98 / 1 	səbi	101 Nertic							 				inoi						
	Ź	Ś	nviro	Albuc	Fa	alysi	(°	USIC			SIE	IC F) SnoinA							 _										
	-		halle	-	75	Ana		(SI		- <u>-</u> 027	8 10	0128) HA9							_				/IICa						
		Ż	ww.	IS NE	5-391				(	1.4C	- 99 P	EDB (Metho								-			เทลเ						
	Ι		5	awkir	5-34!				(	1.81	<b>7</b> p	онјэМ) НЧТ							 				9 0 0						
		] [		31 H	I. 50		(0	AM\C	ЯC	1/02	19)	88108 H9T	×	×									й н						
				490	Te		٨)	ijuo si	29)	Hd.	L+3	8TM+X3T8											larks						
_								(120	3)s'	8W.	L+3	атм+хэта										4	Ren						
			lls								۸۲	6 22	202	202	202	202	202	202				am	1617	ime					
			t We								N- 11	S S L	`	,				۱ ۱					<u>د</u> و	- -					
			lient				ns			N N		jà ∓ ©										Date	8	Date					
		h ľ	Brad	2	t		Hai			A le	۲ ا ل								 +			_	IJ						
		l Ru≲	ss-(	ه	Eve		llen		2	2	5	pe	<u></u>	eat	ő	õ	304	eat					3						
	ime:		Cro	<b>%</b>	hual	<b>5</b> 66	er: A				Pratui	Ty	T	Ž	Ŧ	H	$H_2$	ž					3						
	T bri	ard	ame:	I	Anr	3232	anag		ľ	-		 	<u>۸-5</u>			_ +	_	1	 -				. +7						
	-Arou	tand	sct N		sct #:	£ 12(	SCT N		-		el el	e anc	02	50 ml	50 ml	25 ml	25 ml	00 ml stic-				vid ber	λ C	ved by					
	Turn	×	Proj€	Date	Proje	Ъ	Proje				Sam	<sup>T</sup> YO	40m	24 arr	pla pla	1; pla	11 pla	5( pla				Decei		Hecei					
•							Ē	Î	) ) )														-						
	פ	inal					0.00	in of the	וחמוו			est																	
	50	erm			413		eavo	2/1	2			edn	-13											2					
	<b>~</b>	d Ti			M 87		And	A (E.	コ ン +			le R	M										ł	3					
	ð	liel		0	Ĩ.	မ္မ	09 20					amp											l	ر ً					
	stc	noo		495	field	4-14	Hair	>	1 <			ů										L L	š∖ Γ	in the second					
	깅	- B		CR	1 moc	5-53	en.S.					atrix	٥ ٥					•						AD					
	Ģ	avoi		s: <b>2</b>	ă	91	Ī			<b>1</b>	ì	<u> </u>							 			0 1							
	lain	Ande		ddres			⊏ax#:	lickage	D B	T(ma)	(odf.	Time	2 2									.044		ine:  824					
	<b>さ</b>	nt: 🖌		ling A		ne #:	ail or	ac Pé			دَ	te l	100						+			 	<u></u>	18					
		Clie		Mai		Pho	emé	ΦŎ Γ			4	Da	1/8									cto C	Bee	Date 8/6/					
1		•								(N	l 10	(X)	səle	duB 1	iΑ											Ś			1
----	------------	--------	--------	---------------	----------	----------	-------	--------	--------	-------------	------------	--------------	-------------	---------------	-----------	------------	--------------	----------------	----------------	-------------------	----------------	----------	----------	--	----------	------------------	----------	------------	--------
3-	-	1 6																	-			<u> </u>	ļ		<u> </u>	l <u>y</u> te			
•	Ē	22	)				٢C	202	Sytin	uils		/- '	uəi	ID .ne	99						×					Ana			
ō				60	)					suo	our our	7 - 1		10 .ne	99 					×	×				_	 get			
M	Ĩ		_	871(	107						sle M	taN	nno I ha	vloss					×							 Tar			
1	2			Σz	454	st					(0)	- - -	ime	S/ 020	8											 and			
	à	2 3	nta	aue.	2-37	anb	6		17	000				1 8090	8	×						-	<u> </u>			ds a			
	5	5 U	nme	Juer	20 X	s Re				808 05'1	NI'E	<u>ои,</u>			18					_						tho			
			nviro	Albu	Ц	alysi	· · ·	03	18	210	1 5			a Anu	עי עי											 I Me			
		19	halle	, 11	75	An	-	(	SW	150	/79	5 10 1-1-	019	28) HA	/a //											 rtica			
	5		Ŵ	s NE	-397					(L)	70	g po	ori	W) 80							[					naly			
	1		\$	wkin	-345					()	81		oqia	W) Hc	<u>іт</u>						<u> </u>				-	e A			
		ר ר		1 Ha	. 505		(c	MК	105	JD/	оя	ອ)	851	08 Ha	ш	×	×									Se			
				490	_ Te		()	٥ul	SE	5)⊢	IЧТ	+=	atv	I+XƏT	в						<u> </u>					arks:			
								(12	:08)	s'8	MT	+3	атı	I+X∃T	.в					<u>†</u>						Rem			
													x.		- 1	ß	9	m	K	m	m					- <u></u>	ट		1
	2		s				ĺ							<u>o</u> (	N	ğ	3	3	9	19	3					ime	<u> </u>	l me	)
			Vell									10	5	AL P	X		١	-			,					Г	<u>ك</u>	20-02	i I
			TH A	I			2				9	jų įų	2)22	Щ.	đ											Date	je	C C C	
			adje	$\tilde{0}$	يد		Hair			/ne		Jí Im	22	<u> </u>	9											Ф		Ì	
		Rush	ngra	۲, یک اروم	Ver		en			Pay	: 	10 10		e ative		_	щ	33	3	4	<b>±</b>							1	1
	je.		MO		alE	9	I			acy	Yes	ature		Type		오	Nea	ŇH	N I	1 <sub>2</sub> S(	Nea						Þ		į
	Tin	T	le: D	W	nuu	326	ager			Ē	R			<u>م</u>					- 							 ~	쉬		Ş
	ouno	ndarı	Nam		# ¥	262	Man					Ten		iner nd #		Š	Ξž	د ۲-	E -	일트 관	문고					þy:		à N	
	m-Ar	Star	oject	te:	oject	# 7	oject			mple	<u>e</u>	mple		onta pe a		<u>  ج</u>	250 I mbe	250 I lasti	125 I lasti	125 r lasti	500 r lasti					eived	الح	eived	1
	<u>, 1</u>	×	Ъ Ц	Dai	<u> </u>	<u>7</u>	Prc			Sai	б	Sai		ŭ ≽	$\square$	<u>4</u>	τ, α	<u>`` a</u>								Rec	5		
	_						mo		ion)					≙															
	20	ina			_		or.c		ilidat					lest															
	ŏ	erm			410		eavi		II Va					equ		5 4												X	
	Ř	Τp			A 87		And		4 F			i		<u>e</u> R		δ	<u> </u>		·-	†						ļ		R R	)
	ð	Ifiel		0	Į,	83	©s(		svel 4					dmg														J.	5
	stc	noo		499	ield	-14	Hair		×					s					3							َ <b>ا</b> لَّةِ			
	U C	Ē		CR	omf	-534	n.S.I				Щ			ž		0										 ished /	<b>x</b>		
	Ŀ	Vor		50	Blo	915	Alle				Ň			Mat		Ŧ										Selinq.			
	Ľ	deav		'ess:			#	ige:			e)			- er		গ				-						 <u></u> ,		<u>ر ب</u>	-
	ha	And		Addi		<b>₩</b>	, Fax	Packe	dard	Ļ	(Typ			Tin		ě					┢					Time:	٦		1
I	ပု	ent:		iling	!	one i	ail o	QC F	Stan	Othe	EDD			ate		e,										 	Q		
		: ا		Ма		Ē	en	A Q			×			Ő	Q	51										گۇ ا	)		ł

ļ	(	•					F						5"		ין א	4	
Chair	1-01-CI	ustody F	Record	Turn-Around	Time:					-		10L	Z	Ū	ł		
Client: Ande	avor - B	loomfield	Terminal	X Standard	□ Rush			7 [						RA N		¦≿	
				Project Name	: Downgra	idient Wells			- MM	.haller	Nironr	nental.	E E E		)		
Mailing Addres	s: 50 CF	R 4990	:	Date:	ן       		490	11 Hav	kins N	- - Ⅲ	Ibuque	erque,	NM 8	7109			
	Bloom	ifield, NM 8	37413	Project #: An	inual Even	Ţ	Te	l. 505-	345-3	975	Fax	505-34	45-41(	27			
Phone #:	915-53	34-1483		PO# 12623	:266					Ana	lysis I	Reque	st				
email or Fax#:	Allen.S	hains@An.	ideavor.com	Project Mana	ger: Allen H	lains	(/	(0			(†	s			° C	7 -	
QA/QC Package	6		( <u>moitokila)</u> (1				(120 (10 s	AM/C		(SI	′0S'†(	bCB.			)0.8v:		
		A Level 4 (r	-uli vaiidation)	Sampler	Tracy Day		8)s'8	טאס	()	MIS	) <sub>2</sub> ,PC	280			sns tinit		(
X EDD (Tvpe)	EXCEL	_ 1		On Ice	M Yes		LPH LME	\O5 . 8 h	04	57C	DN' <sup>e</sup>	8/9	(∀	Sje	oin. Ika		N 10
				Sample Tem	berature 3 4	-25-1.0= 2.4	L+3: L+3:	(GI	g po	8 10 1916	'ON'	səpi	ο۸- \_	stəN	∀ ∀		<u>م (</u>
Poto T				Container	Preservative	2 coches	атм+ атм+	86158	Metho	0168	IO,F) a	Pestic	(CA) (	l bəvi	wəyე wəyე		səldd
		oampie	Request in	Type and #	Type	R 13 8 2 2	XJT8 XJT8	B HqT	EDB (	) HA9 A929	noinA	1 1808	0228	ossiC	) .nອຍ Gen. (		∆ir Bu
8/3/18/200	H <sub>2</sub> O	M	W-11	40ml VOA-5	НСІ	204		×			<u>'</u>	×			) )		/
				250 ml amber-1	Neat	R ST		×									
				1 liter	Neat	P02							×				
				250 ml plastic-1	HNO3	HO2				×		<u> </u>					
				125 ml plastic-1	HNO3	102								×			
				125 ml plastic-1	H <sub>2</sub> SO <sub>4</sub>	top									×		
				500 ml plastic-1	Neat	hoe									×		
0	 	1			- 114.												
2/3/10	1420	וגוע ג	SLANK	40 ML 104	3 11/	5m2		+		+		4			<u> </u>	$\square$	
															-		
		, ,							$\square$	$\left  - \right $						$\square$	
Date: Time:	Relinquish	aed by:		Received by:	مرم	$\begin{cases} \text{Date Time} \\ \delta \\ \delta \\ \delta \\ \delta \\ \delta \\ \delta \\ \delta \\ \delta \\ \delta \\ $	Remarks	See	e Ana	lytical	Meth	ods a	T pue	arge	t Ana	alytes	ம்
Date: Time:	Relipopuish	lintil	rel	Received by:	ha i.	Defe lo TIMS											

#### TABLE 2

#### Analytical Methods and Target Analytes Facility-Wide Groundwater Monitoring Plan - June 2017 Western Refining Southwest, Inc. - Bloomfield Refinery

VOCs (EPA Method 8260B) <sup>(1)</sup>	Total Recoverable Metals (F)	PA Method 6010B/7470)
- Target List	- Target List (not applicable to	River Terrace Sampling Events)
Benzene	Arsenic	
Toluene	Barium	Marcury
Ethylbenzene	Cadmium	Salanium
Xylenes	Chromium	Silver
Methvl tert butvl ether (MTBE)	- Target List (for River Terrace	Sampling Events Only)
SVOCs - (EPA Method 8270)	I and	Bamping Events Only)
- Method List	Marcum (DW 1 Oh	(IV)
TPH-GRO (EPA Method 8015B)	Mercury (Dir-1 Oil	
- Gasoline Range Organics	Dissolved Metals (EPA Metho	od 6010B / 7470)
TPH-DRO (EPA Method 8015B)	- Target List (for Refinery Con	polex. Outfalls, and River)
- Diesel Range Organics	Arsenic	Manganese
- Motor Oil Range Organics	Barium	Mercurv
Total Carbon Dioxide (Laboratory Calculated)	Cadmium	Potassium
- Dissolved CO2	Calcium	Selenium
Specific Conductivity (EPA Method 120.1 or field measurement)	Chromium	Silver
- Specific conductance	Copper	Sodium
TDS (EPA Method 160.1 or field measurement)	Iron	Uranium
- Total dissolved solids	Lead	Zinc
General Chemistry - Anions (EPA Method 300.0)	Magnesium	
Fluoride		
Chloride		
Bromide	TPH = total petroleum hydrocar	rbons
Nitrogen, Nitrite (as N)	GRO = gasoline range organics	
Nitrogen, Nitrate (as N)	VOCs = volatile organic compo	unds
Phosphorous, Orthophosphate (As P)	DRO = diesel range organics	
Sulfate	TDS = total dissolved solids	
General Chemistry - Alkalinity (EPA Method 310.1)		
Alkalinity, Total		
Carbonate		
Bicarbonate		

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 Piezomenter 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: <u>www.hallenvironmental.com</u>

August 31, 2018

Allen Hains Andeavor Bloomfield 111 CR 4990 Bloomfield, NM 87413 TEL: (915) 534-1483 FAX

RE: Cross Gradient and Downgradient Wells

OrderNo.: 1808439

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 9 sample(s) on 8/8/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0901

Sincerely,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Date Reported: 8/31/2018

Project:	Cross Gradient and Downgradient	Wells		Collecti	on Date	: 8/7	/2018 7:45:00 AM	
Lab ID:	1808439-001	Matrix: AQUE	OUS	Receiv	ed Date	: 8/8	3/2018 7:00:00 AM	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
ЕРА МЕТ	HOD 8015D: DIESEL RANGE						Analyst:	Irm
Diesel Ra	ange Organics (DRO)	ND	0.40		mg/L	1	8/13/2018 12:51:28 PM	39725
Motor Oi	I Range Organics (MRO)	ND	2.5		mg/L	1	8/13/2018 12:51:28 PM	39725
Surr: [	DNOP	105	76.6-135		%Rec	1	8/13/2018 12:51:28 PM	39725
CARBON	DIOXIDE						Analyst	JRR
Total Ca	rbon Dioxide	170	1.0	Н	mg CO2/	1	8/15/2018 4:07:06 PM	R53469
EPA MET	HOD 300.0: ANIONS						Analyst	smb
Fluoride		ND	0.10		mg/L	1	8/13/2018 10:27:56 AM	R53415
Chloride		680	25		mg/L	50	8/21/2018 2:25:40 AM	R53580
Bromide		4.3	0.10		mg/L	1	8/13/2018 10:27:56 AM	R53415
Phospho	rus, Orthophosphate (As P)	ND	10	н	mg/L	20	8/13/2018 10:40:20 AM	R53415
Sulfate		1600	25		mg/L	50	8/21/2018 2:25:40 AM	R53580
Nitrate+N	Nitrite as N	43	1.0	*	mg/L	5	8/13/2018 2:36:09 PM	R53415
SM2320E	B: ALKALINITY						Analyst	JRR
Bicarbon	ate (As CaCO3)	180.7	20.00		mg/L Ca	1	8/15/2018 4:07:06 PM	R53469
Carbona	te (As CaCO3)	ND	2.000		mg/L Ca	1	8/15/2018 4:07:06 PM	R53469
Total Alk	alinity (as CaCO3)	180.7	20.00		mg/L Ca	1	8/15/2018 4:07:06 PM	R53469
EPA MET	HOD 7470: MERCURY						Analyst	rde
Mercury		ND	0.00020		mg/L	1	8/29/2018 11:26:04 AM	40027
EPA MET	HOD 7470: MERCURY						Analyst	rde
Mercury		ND	0.00020	Filtered	mg/L	1	8/29/2018 11:28:19 AM	40027
EPA MET	HOD 6010B: DISSOLVED METAL	S					Analyst	pmf
Arsenic		ND	0.020		mg/L	1	8/20/2018 2:01:53 PM	A53550
Barium		ND	0.020		mg/L	1	8/20/2018 2:01:53 PM	A53550
Cadmiun	n	ND	0.0020		mg/L	1	8/20/2018 2:01:53 PM	A53550
Calcium		320	5.0		mg/L	5	8/20/2018 2:37:13 PM	A53550
Chromiu	m	ND	0.0060		mg/L	1	8/20/2018 2:01:53 PM	A53550
Copper		ND	0.0060		mg/L	1	8/20/2018 2:01:53 PM	A53550
Iron		ND	0.020		mg/L	1	8/20/2018 2:01:53 PM	A53550
Lead		ND	0.0050		mg/L	1	8/20/2018 5:19:26 PM	B53550
Magnesi	um	47	1.0		mg/L	1	8/20/2018 2:01:53 PM	A53550
Mangane	ese	ND	0.0020		mg/L	1	8/20/2018 2:01:53 PM	A53550
Potassiu	m	3.4	1.0		mg/L	1	8/20/2018 2:01:53 PM	A53550
Selenium	1	ND	0.050		mg/L	1	8/20/2018 2:01:53 PM	A53550
Silver		0.0082	0.0050		mg/L	1	8/20/2018 5:19:26 PM	B53550
Sodium		770	10		mg/L	10	8/20/2018 2:39:02 PM	A53550
Uranium		ND	0.10		mg/L	1	8/20/2018 2:01:53 PM	A53550

Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

Client Sample ID: MW-32

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

**Qualifiers:** \* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
  - Н Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quanitative Limit
  - % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

CLIENT:	Andeavor Bloomfield		Clie	ent Sample II	D: M	W-32	
Project:	Cross Gradient and Downgradien	t Wells	Co	ollection Dat	e: 8/7	/2018 7:45:00 AM	
Lab ID:	1808439-001	Matrix: AQUEC	OUS F	Received Dat	<b>e:</b> 8/8	8/2018 7:00:00 AM	
Analyses		Result	PQL (	Qual Units	DF	Date Analyzed	Batch
EPA MET	HOD 6010B: DISSOLVED META	LS				Analyst:	pmf
Zinc		ND	0.020	mg/L	1	8/20/2018 2:01:53 PM	A53550
EPA 6010	B: TOTAL RECOVERABLE MET	ALS				Analyst:	pmf
Arsenic		ND	0.020	ma/L	1	8/13/2018 4:26:25 PM	39719
Barium		ND	0.020	mg/L	1	8/13/2018 1:08:37 PM	39719
Cadmium	1	ND	0.0020	mg/L	1	8/13/2018 1:08:37 PM	39719
Chromiur	n	ND	0.0060	mg/L	1	8/13/2018 1:08:37 PM	39719
Lead		ND	0.0050	mg/L	1	8/13/2018 8:26:35 PM	39719
Selenium	I	ND	0.050	mg/L	1	8/13/2018 1:08:37 PM	39719
Silver		0.011	0.0050	mg/L	1	8/13/2018 1:08:37 PM	39719
EPA MET	HOD 8015D: GASOLINE RANGE					Analyst:	AG
Gasoline	Range Organics (GRO)	ND	0.050	mg/L	1	8/10/2018 12:24:08 PM	A53346
Surr: E	BFB	103	70-130	%Rec	1	8/10/2018 12:24:08 PM	A53346
EPA MET	HOD 8260B: VOLATILES					Analyst:	RAA
Benzene		ND	1.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
Toluene		ND	1.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
Ethylbenz	zene	ND	1.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
Methyl te	rt-butyl ether (MTBE)	ND	1.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
1,2,4-Trir	nethylbenzene	ND	1.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
1,3,5-Trir	nethylbenzene	ND	1.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
1,2-Dichle	oroethane (EDC)	ND	1.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
1,2-Dibro	moethane (EDB)	ND	1.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
Naphthal	ene	ND	2.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
1-Methylr	naphthalene	ND	4.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
2-Methylr	naphthalene	ND	4.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
Acetone		ND	10	µg/L	1	8/13/2018 5:06:00 PM	R53391
Bromobe	nzene	ND	1.0	μg/L	1	8/13/2018 5:06:00 PM	R53391
Bromodic	chloromethane	ND	1.0	μg/L	1	8/13/2018 5:06:00 PM	R53391
Bromofor	m	ND	1.0	μg/L	1	8/13/2018 5:06:00 PM	R53391
Bromome	ethane	ND	3.0	μg/L	1	8/13/2018 5:06:00 PM	R53391
2-Butano	ne	ND	10	μg/L	1	8/13/2018 5:06:00 PM	R53391
Carbon d	isulfide	ND	10	μg/L	1	8/13/2018 5:06:00 PM	R53391
Carbon T	etrachloride	ND	1.0	μg/L	1	8/13/2018 5:06:00 PM	R53391
Chlorobe	nzene	ND	1.0	μg/L	1	8/13/2018 5:06:00 PM	R53391
Chloroeth	nane	ND	2.0	μg/L	1	8/13/2018 5:06:00 PM	R53391
Chlorofor	m	ND	1.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
Chlorome	ethane	ND	3.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
2-Chlorot	oluene	ND	1.0	µg/L	1	8/13/2018 5:06:00 PM	R53391
4-Chlorot	oluene	ND	1.0	μg/L	1	8/13/2018 5:06:00 PM	R53391

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

\* **Qualifiers:** Value exceeds Maximum Contaminant Level.

- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 8/31/2018

**Client Sample ID: MW-32** 

Project: Lab ID:	Cross Gradient and Downgrad	ient Wells Matrix: AOUEC		Collect Recei	ion Dat ved Dat	e: 8/7	7/2018 7:45:00 AM	
Analyses	1000437 001	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8260B: VOLATILES						Analyst	: RAA
cis-1 2-D	)CE	ND	1.0		ug/l	1	8/13/2018 5:06:00 PM	R53391
cis-1.3-D	)ichloropropene	ND	1.0		ua/l	1	8/13/2018 5:06:00 PM	R53391
1.2-Dibro	omo-3-chloropropane	ND	2.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
Dibromo	chloromethane	ND	1.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
Dibromo	methane	ND	1.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
1.2-Dichl	lorobenzene	ND	1.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
1.3-Dichl	lorobenzene	ND	1.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
1.4-Dichl	lorobenzene	ND	1.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
Dichloro	difluoromethane	ND	1.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
1.1-Dichl	loroethane	ND	1.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
1.1-Dichl	loroethene	ND	1.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
1.2-Dichl	loropropane	ND	1.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
1.3-Dichl	loropropane	ND	1.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
2.2-Dichl	loropropane	ND	2.0		ua/L	1	8/13/2018 5:06:00 PM	R53391
1,1-Dichl	loropropene	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
Hexachlo	probutadiene	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
2-Hexan	one	ND	10		µg/L	1	8/13/2018 5:06:00 PM	R53391
Isopropy	Ibenzene	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
4-Isopror	ovitoluene	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
4-Methyl	-2-pentanone	ND	10		µg/L	1	8/13/2018 5:06:00 PM	R53391
Methylen	ne Chloride	ND	3.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
n-Butylbe	enzene	ND	3.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
n-Propyll	benzene	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
sec-Buty	lbenzene	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
Styrene		ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
tert-Buty	lbenzene	ND	1.0		μg/L	1	8/13/2018 5:06:00 PM	R53391
1,1,1,2-T	etrachloroethane	ND	1.0		μg/L	1	8/13/2018 5:06:00 PM	R53391
1,1,2,2-T	etrachloroethane	ND	2.0		μg/L	1	8/13/2018 5:06:00 PM	R53391
Tetrachlo	proethene (PCE)	ND	1.0		μg/L	1	8/13/2018 5:06:00 PM	R53391
trans-1,2	P-DCE	ND	1.0		μg/L	1	8/13/2018 5:06:00 PM	R53391
trans-1,3	B-Dichloropropene	ND	1.0		μg/L	1	8/13/2018 5:06:00 PM	R53391
1,2,3-Trio	chlorobenzene	ND	1.0		μg/L	1	8/13/2018 5:06:00 PM	R53391
1,2,4-Trie	chlorobenzene	ND	1.0		μg/L	1	8/13/2018 5:06:00 PM	R53391
1,1,1-Trio	chloroethane	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
1,1,2-Trio	chloroethane	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
Trichloro	ethene (TCE)	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
Trichloro	fluoromethane	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
1,2,3-Trio	chloropropane	ND	2.0		µg/L	1	8/13/2018 5:06:00 PM	R53391
Vinyl chlo	oride	ND	1.0		µg/L	1	8/13/2018 5:06:00 PM	R53391

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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
- PQL Practical Quanitative Limit
- 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 Page 3 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

8/13/2018 5:06:00 PM

8/13/2018 5:06:00 PM

R53391

R53391

Hall Environmental Analysis Laboratory. Inc.	
--	--

CLIENT:	Andeavor Bloomfield			Cl	ient Sa	mple II	D: MV	W-32		
Project:	Cross Gradient and Downgradi	ient Wells		(	Collect	ion Dat	<b>e:</b> 8/7	7/2018 7:45:00 AN	1	
Lab ID:	1808439-001	Matrix:	AQUEOUS		Receiv	ved Dat	e: 8/8	3/2018 7:00:00 AN	Л	
Analyses		Res	sult	PQL	Qual	Units	DF	Date Analyzed		Batch
EPA MET	HOD 8260B: VOLATILES							An	alyst	RAA
Xylenes,	Total		ND	1.5		µg/L	1	8/13/2018 5:06:00	PM	R53391
Surr: 1	,2-Dichloroethane-d4		103 7	D-130		%Rec	1	8/13/2018 5:06:00	PM	R53391
Surr: 4	I-Bromofluorobenzene		102 7	J-130		%Rec	1	8/13/2018 5:06:00	PM	R53391

70-130

70-130

%Rec

%Rec

1

1

108

94.4

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

-

Surr: Dibromofluoromethane

Surr: Toluene-d8

- \* Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: Field Blank #2

**Project:** Cross Gradient and Downgradient Wells Lab ID: 1808439-002 Matrix: AQUEOUS

**CLIENT:** Andeavor Bloomfield

Collection Date: 8/7/2018 8:00:00 AM Received Date: 8/8/2018 7:00:00 AM

. .. .

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst:	Irm
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	8/13/2018 2:05:02 PM	39725
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/13/2018 2:05:02 PM	39725
Surr: DNOP	108	76.6-135		%Rec	1	8/13/2018 2:05:02 PM	39725
CARBON DIOXIDE						Analyst:	JRR
Total Carbon Dioxide	7.1	1.0	Н	mg CO2/	1	8/15/2018 4:42:19 PM	R53469
EPA METHOD 300.0: ANIONS						Analyst:	smb
Fluoride	ND	0.10		ma/L	1	8/13/2018 10:52:45 AM	R53415
Chloride	ND	0.50		mg/L	1	8/13/2018 10:52:45 AM	R53415
Bromide	ND	0.10		mg/L	1	8/13/2018 10:52:45 AM	R53415
Phosphorus, Orthophosphate (As P)	ND	0.50	н	mg/L	1	8/13/2018 10:52:45 AM	R53415
Sulfate	ND	0.50		mg/L	1	8/13/2018 10:52:45 AM	R53415
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/13/2018 2:48:35 PM	R53415
SM2320B: ALKALINITY						Analyst:	JRR
Bicarbonate (As CaCO3)	ND	20.00		mg/L Ca	1	8/15/2018 4:42:19 PM	R53469
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/15/2018 4:42:19 PM	R53469
Total Alkalinity (as CaCO3)	ND	20.00		mg/L Ca	1	8/15/2018 4:42:19 PM	R53469
EPA METHOD 7470: MERCURY						Analyst:	rde
Mercury	ND	0.00020		mg/L	1	8/29/2018 11:30:35 AM	40027
EPA METHOD 7470: MERCURY						Analyst:	rde
Mercury	ND	0.00020	Filtered	mg/L	1	8/29/2018 11:37:28 AM	40027
EPA METHOD 6010B: DISSOLVED METALS						Analyst:	pmf
Arsenic	ND	0.020		mg/L	1	8/20/2018 2:03:42 PM	A53550
Barium	ND	0.020		mg/L	1	8/20/2018 2:03:42 PM	A53550
Cadmium	ND	0.0020		mg/L	1	8/20/2018 2:03:42 PM	A53550
Calcium	ND	1.0		mg/L	1	8/20/2018 2:03:42 PM	A53550
Chromium	ND	0.0060		mg/L	1	8/20/2018 2:03:42 PM	A53550
Copper	ND	0.0060		mg/L	1	8/20/2018 2:03:42 PM	A53550
Iron	ND	0.020		mg/L	1	8/20/2018 2:03:42 PM	A53550
Lead	ND	0.0050		mg/L	1	8/20/2018 5:21:09 PM	B53550
Magnesium	ND	1.0		mg/L	1	8/20/2018 2:03:42 PM	A53550
Manganese	ND	0.0020		mg/L	1	8/20/2018 2:03:42 PM	A53550
Potassium	ND	1.0		mg/L	1	8/20/2018 2:03:42 PM	A53550
Selenium	ND	0.050		mg/L	1	8/20/2018 2:03:42 PM	A53550
Silver	ND	0.0050		mg/L	1	8/20/2018 5:21:09 PM	B53550
Sodium	ND	1.0		mg/L	1	8/20/2018 2:03:42 PM	A53550
Uranium	ND	0.10		mg/L	1	8/20/2018 2:03:42 PM	A53550

Qualifiers: *	Value exceeds Maximum	Contaminant Level.
---------------	-----------------------	--------------------

- D Sample Diluted Due to Matrix
  - Н Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quanitative Limit
  - % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 5 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Date Reported: 8/31/2018

Hall Environmental	Analysis	Laboratory,	Inc.
--------------------	----------	-------------	------

Cross Gradient and Downgradient Wells

Client Sample ID: Field Blank #2 Collection Date: 8/7/2018 8:00:00 AM

1808439-002

**CLIENT:** Andeavor Bloomfield

**Project:** 

Lab ID:

Received Date: 8/8/2018 7:00:00 AM

- -- -

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: DISSOLVED METALS					Analyst	: pmf
Zinc	0.049	0.020	mg/L	1	8/27/2018 2:38:57 PM	A53717
EPA 6010B: TOTAL RECOVERABLE METALS			-		Analyst	pmf
	ND	0 020	ma/l	1	8/13/2018 /·30·/3 PM	30710
Barium		0.020	mg/L	1	8/13/2018 1:1/-18 PM	30710
Cadmium	ND	0.020	mg/L	1	8/13/2018 1:14:18 PM	39719
Chromium	ND	0.0020	mg/L	1	8/13/2018 1:14:18 PM	39719
Lead	ND	0.0050	mg/L	1	8/13/2018 8:35:17 PM	39719
Selenium	ND	0.050	mg/L	1	8/13/2018 1:14:18 PM	39719
Silver	ND	0.0050	mg/L	1	8/13/2018 1:14:18 PM	39719
EPA METHOD 8015D: GASOLINE RANGE			5		Analyst	AG
Gasoline Range Organics (GRO)	ND	0.050	ma/l	1	8/10/2018 12·47·17 PM	A53346
Surr: BEB	104	70-130	%Rec	1	8/10/2018 12:47:17 PM	A53346
FPA METHOD 8260B: VOLATILES		10 100	,	•	Analyst	: RAA
Benzene	ND	1.0	ug/l	1	8/13/2018 6·20·00 PM	R53301
Toluene	ND	1.0	μg/L μg/l	1	8/13/2018 6·20·00 PM	R53391
Ethylbenzene	ND	1.0	μg/L μg/l	1	8/13/2018 6:20:00 PM	R53391
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	8/13/2018 6:20:00 PM	R53391
1.2.4-Trimethylbenzene	ND	1.0	µg/L µg/l	1	8/13/2018 6:20:00 PM	R53391
1.3.5-Trimethylbenzene	ND	1.0	µg/L µg/l	1	8/13/2018 6:20:00 PM	R53391
1.2-Dichloroethane (EDC)	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,2-Dibromoethane (EDB)	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Naphthalene	ND	2.0	μg/L	1	8/13/2018 6:20:00 PM	R53391
1-Methylnaphthalene	ND	4.0	μg/L	1	8/13/2018 6:20:00 PM	R53391
2-Methylnaphthalene	ND	4.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Acetone	ND	10	µg/L	1	8/13/2018 6:20:00 PM	R53391
Bromobenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Bromodichloromethane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Bromoform	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Bromomethane	ND	3.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
2-Butanone	ND	10	µg/L	1	8/13/2018 6:20:00 PM	R53391
Carbon disulfide	ND	10	µg/L	1	8/13/2018 6:20:00 PM	R53391
Carbon Tetrachloride	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Chlorobenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Chloroethane	ND	2.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Chloroform	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Chloromethane	ND	3.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
2-Chlorotoluene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
4-Chlorotoluene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391

Matrix: AQUEOUS

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

\* **Oualifiers:** Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 6 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab ID: 1808439-002	Matrix: AQUEC	DUS	<b>Received Dat</b>	8/2018 7:00:00 AM		
Analyses	Result PQL Qual Units DF Da		<b>Date Analyzed</b>	Batch		
EPA METHOD 8260B: VOLATILES					Analyst	RAA
cis-1,2-DCE	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
cis-1,3-Dichloropropene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,2-Dibromo-3-chloropropane	ND	2.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Dibromochloromethane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Dibromomethane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,2-Dichlorobenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,3-Dichlorobenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,4-Dichlorobenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Dichlorodifluoromethane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,1-Dichloroethane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,1-Dichloroethene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,2-Dichloropropane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,3-Dichloropropane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
2,2-Dichloropropane	ND	2.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,1-Dichloropropene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Hexachlorobutadiene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
2-Hexanone	ND	10	µg/L	1	8/13/2018 6:20:00 PM	R53391
Isopropylbenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
4-Isopropyltoluene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
4-Methyl-2-pentanone	ND	10	µg/L	1	8/13/2018 6:20:00 PM	R53391
Methylene Chloride	ND	3.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
n-Butylbenzene	ND	3.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
n-Propylbenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
sec-Butylbenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Styrene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
tert-Butylbenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
trans-1,2-DCE	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,1,1-Trichloroethane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,1,2-Trichloroethane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Trichloroethene (TCE)	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Trichlorofluoromethane	ND	1.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
1,2,3-Trichloropropane	ND	2.0	µg/L	1	8/13/2018 6:20:00 PM	R53391
Vinyl chloride	ND	1.0	μg/L	1	8/13/2018 6:20:00 PM	R53391

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

Project: Cross Gradient and Downgradient Wells

Client Sample ID: Field Blank #2 Collection Date: 8/7/2018 8:00:00 AM Received Date: 8/8/2018 7:00:00 AM

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 7 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

<b>CLIENT:</b>	Andeavor Bloomfield	ient Wells Client Sample ID: Field Blank #2 Collection Date: 8/7/2018 8:00:00 AM							
Project:	Cross Gradient and Downgradien								
Lab ID:	1808439-002	Matrix: AQUEOUS Received Date: 8/8/2018 7:00:00 AM						/2018 7:00:00 AM	
Analyses		R	esult	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8260B: VOLATILES							Analyst:	RAA
Xylenes,	Total		ND	1.5		µg/L	1	8/13/2018 6:20:00 PM	R53391
Surr: 1	,2-Dichloroethane-d4		105	70-130		%Rec	1	8/13/2018 6:20:00 PM	R53391
Surr: 4	1-Bromofluorobenzene		103	70-130		%Rec	1	8/13/2018 6:20:00 PM	R53391
Surr: E	Dibromofluoromethane		106	70-130		%Rec	1	8/13/2018 6:20:00 PM	R53391
Surr: 1	Foluene-d8		94.1	70-130		%Rec	1	8/13/2018 6:20:00 PM	R53391

# Hall Environmental Analysis Laboratory, Inc.

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

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
- PQL Practical Quanitative Limit
- 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 Page 8 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Client Sample ID: MW-27

Date Reported: 8/31/2018

Project:	Cross Gradient and Downgradient	Wells	(	Collecti	ion Date:	: 8/7/	/2018 8:45:00 AM	
Lab ID:	Lab ID:         1808439-003         Matrix:         AQUEOUS         Received Date:         8/8/2018         7:00:00 AN							
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
ΕΡΑ ΜΕΊ	THOD 8015D: DIESEL RANGE						Analyst	Irm
Diesel R	ange Organics (DRO)	ND	0.40		mg/L	1	8/13/2018 2:29:38 PM	39725
Motor Oi	I Range Organics (MRO)	ND	2.5		mg/L	1	8/13/2018 2:29:38 PM	39725
Surr: I	DNOP	107	76.6-135		%Rec	1	8/13/2018 2:29:38 PM	39725
CARBON	I DIOXIDE						Analyst	JRR
Total Ca	rbon Dioxide	260	1.0	н	mg CO2/	1	8/15/2018 4:56:02 PM	R53469
EPA MET	THOD 300.0: ANIONS						Analyst	smb
Fluoride		ND	2.0		mg/L	20	8/13/2018 11:29:59 AM	R53415
Chloride		870	50		mg/L	100	8/21/2018 2:38:05 AM	R53580
Bromide		8.4	2.0		mg/L	20	8/13/2018 11:29:59 AM	R53415
Phospho	orus, Orthophosphate (As P)	ND	10	н	mg/L	20	8/13/2018 11:29:59 AM	R53415
Sulfate		3100	50		mg/L	100	8/21/2018 2:38:05 AM	R53580
Nitrate+N	Nitrite as N	ND	1.0		mg/L	5	8/13/2018 3:01:00 PM	R53415
SM2320E	3: ALKALINITY						Analyst	JRR
Bicarbor	nate (As CaCO3)	264.0	20.00		mɑ/L Ca	1	8/15/2018 4:56:02 PM	R53469
Carbona	te (As CaCO3)	ND	2.000		mg/L Ca	1	8/15/2018 4:56:02 PM	R53469
Total Alk	alinity (as CaCO3)	264.0	20.00		mg/L Ca	1	8/15/2018 4:56:02 PM	R53469
EPA MET	THOD 7470: MERCURY						Analyst	rde
Mercury		ND	0.00020		mg/L	1	8/29/2018 11:39:45 AM	40027
EPA MET	THOD 7470: MERCURY				-		Analyst	rde
Mercury		ND	0.00020	Filtered	mg/L	1	8/29/2018 11:42:02 AM	40027
	HOD 6010B: DISSOLVED METAL	s			-		Analyst	pmf
Arsenic		ND	0.020		mg/L	1	8/20/2018 2:13:10 PM	A53550
Barium		0.050	0.020		mg/L	1	8/20/2018 2:13:10 PM	A53550
Cadmiur	n	ND	0.0020		mg/L	1	8/20/2018 2:13:10 PM	A53550
Calcium		740	10		mg/L	10	8/20/2018 2:42:40 PM	A53550
Chromiu	m	ND	0.0060		mg/L	1	8/20/2018 2:13:10 PM	A53550
Copper		ND	0.0060		mg/L	1	8/20/2018 2:13:10 PM	A53550
Iron		0.89	0.020		mg/L	1	8/20/2018 2:13:10 PM	A53550
Lead		ND	0.0050		mg/L	1	8/20/2018 5:22:52 PM	B53550
Magnesi	um	110	5.0		mg/L	5	8/20/2018 2:40:51 PM	A53550
Mangane	ese	0.75	0.0020		mg/L	1	8/20/2018 2:13:10 PM	A53550
Potassiu	m	3.7	1.0		mg/L	1	8/20/2018 2:13:10 PM	A53550
Seleniun	n	ND	0.050		mg/L	1	8/20/2018 2:13:10 PM	A53550
Silver		0.018	0.0050		mg/L	1	8/20/2018 5:22:52 PM	B53550
Sodium		890	10		mg/L	10	8/20/2018 2:42:40 PM	A53550
Uranium		ND	0.10		mg/L	1	8/20/2018 2:13:10 PM	A53550

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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

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
  - PQL Practical Quanitative Limit
  - 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 Page 9 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

CLIENT:	Andeavor Bloomfield		Cli	ient Sa	mple II	D: M	W-27				
Project:	Cross Gradient and Downgrad	dient Wells	ls <b>Collection Date:</b> 8/7/2018 8:45:00 AM								
Lab ID:	1808439-003	Matrix: AQUE	DUS	Receiv	ved Dat	<b>e:</b> 8/8	8/2018 7:00:00 AM				
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch			
EPA MET	HOD 6010B: DISSOLVED ME	TALS					Analyst	: pmf			
Zinc		ND	0.020		mg/L	1	8/20/2018 2:13:10 PM	A53550			
EPA 6010	DB: TOTAL RECOVERABLE N	<b>IETALS</b>					Analyst	: pmf			
Arsenic		ND	0.020		mg/L	1	8/13/2018 4:32:10 PM	39719			
Barium		0.066	0.020		mg/L	1	8/13/2018 1:16:19 PM	39719			
Cadmiun	n	ND	0.0020		mg/L	1	8/13/2018 1:16:19 PM	39719			
Chromiu	m	ND	0.0060		mg/L	1	8/13/2018 1:16:19 PM	39719			
Lead		ND	0.0050		mg/L	1	8/13/2018 8:36:44 PM	39719			
Selenium	n	ND	0.050		mg/L	1	8/13/2018 1:16:19 PM	39719			
Silver		0.022	0.0050		mg/L	1	8/13/2018 1:16:19 PM	39719			
EPA MET	HOD 8015D: GASOLINE RAN	IGE					Analyst	: AG			
Gasoline	Range Organics (GRO)	ND	0.050		mg/L	1	8/10/2018 1:33:25 PM	A53346			
Surr: E	3FB	106	70-130		%Rec	1	8/10/2018 1:33:25 PM	A53346			
EPA MET	HOD 8260B: VOLATILES						Analyst	RAA			
Benzene	•	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Toluene		ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Ethylben	zene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Methyl te	ert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
1,2,4-Tri	methylbenzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
1,3,5-Tri	methylbenzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
1,2-Dichl	loroethane (EDC)	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
1,2-Dibro	omoethane (EDB)	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Naphtha	lene	ND	2.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
1-Methyl	naphthalene	ND	4.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
2-Methyl	naphthalene	ND	4.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Acetone		ND	10		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Bromobe	enzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Bromodi	chloromethane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Bromofo	rm	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Bromom	ethane	ND	3.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
2-Butanc	one	ND	10		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Carbon o	disulfide	ND	10		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Carbon 1	Tetrachloride	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Chlorobe	enzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Chloroet	hane	ND	2.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Chlorofo	rm	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			
Chlorom	ernane	ND	3.0		µg/∟	1	8/13/2018 6:44:00 PM	K53391			
2-Chloro		ND	1.0		µg/∟	1	8/13/2018 6:44:00 PM	K53391			
4-Chloro	toiuene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391			

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

\* **Qualifiers:** Value exceeds Maximum Contaminant Level.

- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 10 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 8/31/2018

Client Sample ID: MW-27

Project:Cross Gradient and Downgradient WellsCollection Date: 8/7/2018 8:45:00 ANLab ID:1808439-003Matrix: AQUEOUSReceived Date: 8/8/2018 7:00:00 AN						7/2018 8:45:00 AM 8/2018 7:00:00 AM		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8260B: VOLATILES						Analyst	RAA
cis-1,2-D	CE	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
cis-1,3-D	lichloropropene	ND	1.0		μg/L	1	8/13/2018 6:44:00 PM	R53391
1,2-Dibro	omo-3-chloropropane	ND	2.0		μg/L	1	8/13/2018 6:44:00 PM	R53391
Dibromo	chloromethane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
Dibromo	methane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,2-Dichl	orobenzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,3-Dichl	orobenzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,4-Dichl	orobenzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
Dichloroo	difluoromethane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,1-Dichl	oroethane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,1-Dichl	oroethene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,2-Dichl	oropropane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,3-Dichl	oropropane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
2,2-Dichl	oropropane	ND	2.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,1-Dichl	oropropene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
Hexachlo	probutadiene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
2-Hexand	one	ND	10		µg/L	1	8/13/2018 6:44:00 PM	R53391
Isopropy	lbenzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
4-Isoprop	byltoluene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
4-Methyl-	-2-pentanone	ND	10		µg/L	1	8/13/2018 6:44:00 PM	R53391
Methylen	e Chloride	ND	3.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
n-Butylbe	enzene	ND	3.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
n-Propylk	penzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
sec-Buty	lbenzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
Styrene		ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
tert-Butyl	benzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,1,1,2-T	etrachloroethane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,1,2,2-T	etrachloroethane	ND	2.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
Tetrachlo	proethene (PCE)	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
trans-1,2	-DCE	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
trans-1,3	-Dichloropropene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,2,3-Trio	chlorobenzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,2,4-Trio	chlorobenzene	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,1,1-Trio	chloroethane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,1,2-Tric	chloroethane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
Trichloro	ethene (TCE)	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
Trichloro	fluoromethane	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
1,2,3-Trio	chloropropane	ND	2.0		µg/L	1	8/13/2018 6:44:00 PM	R53391
Vinyl chlo	oride	ND	1.0		µg/L	1	8/13/2018 6:44:00 PM	R53391

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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

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
- PQL Practical Quanitative Limit
- 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 limit. Page 11 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

8/13/2018 6:44:00 PM

8/13/2018 6:44:00 PM

R53391

R53391

Surr: Dibromofluoromethane

Surr: Toluene-d8

CLIENT:	Andeavor Bloomfield	Client Sample ID: MW-27							
Project:	Cross Gradient and Downgradien	ent Wells Collection Date: 8/7/2018 8:45:00 AM						AM	
Lab ID:	1808439-003	Matrix:	AQUEOUS	Rece	ived Date	e: 8/8	/2018 7:00:00	AM	
Analyses		Re	esult	PQL Qua	l Units	DF	Date Analyze	d	Batch
EPA MET	HOD 8260B: VOLATILES							Analyst:	RAA
Xylenes,	Total		ND	1.5	µg/L	1	8/13/2018 6:44	:00 PM	R53391
Surr: 1	,2-Dichloroethane-d4		103 70	0-130	%Rec	1	8/13/2018 6:44	:00 PM	R53391
Surr: 4	I-Bromofluorobenzene		101 70	0-130	%Rec	1	8/13/2018 6:44	:00 PM	R53391

70-130

70-130

%Rec

%Rec

1

1

112

92.8

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
- PQL Practical Quanitative Limit
- 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 Page 12 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

**Client Sample ID: MW-38** 

Date Reported: 8/31/2018

Project:	Cross Gradient and Downgradient	radient Wells Collection Date: 8/7/2018 9:30:00 AM								
Lab ID:	1808439-004	Matrix: AQUEOUS Received Date: 8/8/2018 7:00:00 AM								
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch		
EPA MET	THOD 8015D: DIESEL RANGE						Analyst	Irm		
Diesel R	ange Organics (DRO)	ND	0.40		mg/L	1	8/13/2018 2:54:07 PM	39725		
Motor Oi	I Range Organics (MRO)	ND	2.5		mg/L	1	8/13/2018 2:54:07 PM	39725		
Surr: I	DNOP	107	76.6-135		%Rec	1	8/13/2018 2:54:07 PM	39725		
CARBON	I DIOXIDE						Analyst	JRR		
Total Ca	rbon Dioxide	630	1.0	Н	mg CO2	/ 1	8/15/2018 5:09:59 PM	R53469		
EPA MET	THOD 300.0: ANIONS						Analyst	smb		
Fluoride		0.40	0.10		mg/L	1	8/13/2018 12:07:14 PM	R53415		
Chloride		140	10		mg/L	20	8/13/2018 12:19:38 PM	R53415		
Bromide		1.9	0.10		mg/L	1	8/13/2018 12:07:14 PM	R53415		
Phospho	orus, Orthophosphate (As P)	ND	0.50	н	mg/L	1	8/13/2018 12:07:14 PM	R53415		
Sulfate		21	0.50		mg/L	1	8/13/2018 12:07:14 PM	R53415		
Nitrate+	Nitrite as N	ND	1.0		mg/L	5	8/13/2018 3:13:24 PM	R53415		
SM2320E	B: ALKALINITY						Analyst	JRR		
Bicarbor	nate (As CaCO3)	682.4	20.00		mg/L Ca	1	8/15/2018 5:09:59 PM	R53469		
Carbona	te (As CaCO3)	ND	2.000		mg/L Ca	1	8/15/2018 5:09:59 PM	R53469		
Total Alk	alinity (as CaCO3)	682.4	20.00		mg/L Ca	1	8/15/2018 5:09:59 PM	R53469		
EPA MET	THOD 7470: MERCURY						Analyst	rde		
Mercury		ND	0.00020		mg/L	1	8/29/2018 11:44:19 AM	40027		
EPA MET	THOD 7470: MERCURY						Analyst	rde		
Mercury		ND	0.00020	Filtered	mg/L	1	8/29/2018 11:46:37 AM	40027		
EPA MET	THOD 6010B: DISSOLVED METAL	S					Analyst	pmf		
Arsenic		ND	0.020		mg/L	1	8/20/2018 2:14:44 PM	A53550		
Barium		0.52	0.020		mg/L	1	8/20/2018 2:14:44 PM	A53550		
Cadmiur	n	ND	0.0020		mg/L	1	8/20/2018 2:14:44 PM	A53550		
Calcium		120	5.0		mg/L	5	8/20/2018 2:44:28 PM	A53550		
Chromiu	m	ND	0.0060		mg/L	1	8/20/2018 2:14:44 PM	A53550		
Copper		ND	0.0060		mg/L	1	8/20/2018 2:14:44 PM	A53550		
Iron		0.13	0.020		mg/L	1	8/20/2018 2:14:44 PM	A53550		
Lead		ND	0.0050		mg/L	1	8/20/2018 5:24:27 PM	B53550		
Magnesi	um	20	1.0		mg/L	1	8/20/2018 2:14:44 PM	A53550		
Mangan	ese	2.7	0.010		mg/L	5	8/20/2018 2:44:28 PM	A53550		
Potassiu	Im	2.2	1.0		mg/L	1	8/20/2018 2:14:44 PM	A53550		
Seleniun	n	ND	0.050		mg/L	1	8/20/2018 2:14:44 PM	A53550		
Silver		ND	0.0050		mg/L	1	8/20/2018 5:24:27 PM	B53550		
Sodium		210	5.0		mg/L	5	8/20/2018 2:44:28 PM	A53550		
Uranium		ND	0.10		mg/L	1	8/20/2018 2:14:44 PM	A53550		

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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

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
  - PQL Practical Quanitative Limit
  - 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 Page 13 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

CLIENT: Andeavor Bloomfield		Client Sample ID: MW-38								
<b>Project:</b> Cross Gradient and Downgradien	t Wells	ells <b>Collection Date:</b> 8/7/2018 9:30:00 AM								
Lab ID: 1808439-004	Matrix: AQUE	OUS	Received	l Date: 8	8/8/2018 7:00:00 AM					
Analyses	Result	PQL	Qual U	nits D	OF Date Analyzed	Batch				
EPA METHOD 6010B: DISSOLVED META	LS				Anal	yst: <b>pmf</b>				
Zinc	ND	0.020	rr	ng/L 1	1 8/20/2018 2:14:44 P	M A53550				
EPA 6010B: TOTAL RECOVERABLE MET	ALS				Anal	yst: <b>pmf</b>				
Arsenic	ND	0.020	rr	ng/L 1	1 8/13/2018 4:33:37 P	M 39719				
Barium	0.57	0.020	rr	ng/L 1	1 8/13/2018 1:18:00 P	M 39719				
Cadmium	ND	0.0020	m	ng/L 1	1 8/13/2018 1:18:00 P	M 39719				
Chromium	ND	0.0060	rr	ng/L 1	1 8/13/2018 1:18:00 P	M 39719				
Lead	ND	0.0050	rr	ng/L 1	1 8/13/2018 8:38:11 P	M 39719				
Selenium	ND	0.050	rr	ng/L 1	1 8/13/2018 1:18:00 P	M 39719				
Silver	ND	0.0050	r	ng/L 1	1 8/13/2018 1:18:00 P	M 39719				
EPA METHOD 8015D: GASOLINE RANGE	E				Anal	yst: AG				
Gasoline Range Organics (GRO)	0.18	0.050	rr	ng/L 1	1 8/10/2018 1:56:35 P	M A53346				
Surr: BFB	104	70-130	%	Rec 1	1 8/10/2018 1:56:35 P	M A53346				
EPA METHOD 8270C: SEMIVOLATILES					Anal	yst: JDC				
Acenaphthene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Acenaphthylene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Aniline	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Anthracene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Azobenzene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Benz(a)anthracene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Benzo(a)pyrene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Benzo(b)fluoranthene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Benzo(g,h,i)perylene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Benzo(k)fluoranthene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Benzoic acid	ND	20	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Benzyl alcohol	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Bis(2-chloroethoxy)methane	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Bis(2-chloroethyl)ether	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Bis(2-chloroisopropyl)ether	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Bis(2-ethylhexyl)phthalate	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
4-Bromophenyl phenyl ether	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Butyl benzyl phthalate	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Carbazole	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
4-Chloro-3-methylphenol	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
4-Chloroaniline	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
2-Chloronaphthalene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
2-Chlorophenol	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
4-Chlorophenyl phenyl ether	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				
Chrysene	ND	10	μ	g/L 1	1 8/15/2018 12:23:09	PM 39765				

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

\* **Qualifiers:** Value exceeds Maximum Contaminant Level.

- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 14 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 8/31/2018

**Client Sample ID: MW-38** 

<b>Project:</b> Cross Gradient and Downgradient	Collection Date:         8/7/2018         9:30:00 AM           Matrice:         AOUTOUS         Descind Date:         8/9/2018         7.00.00 AM							
Lab ID: 1808439-004	Matrix: AQUEO	US	Received Date: 8/8/2018 7:00:00 AM					
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch	
EPA METHOD 8270C: SEMIVOLATILES						Analyst:	JDC	
Di-n-butyl phthalate	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Di-n-octyl phthalate	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Dibenzofuran	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
1,2-Dichlorobenzene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
1,3-Dichlorobenzene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
1,4-Dichlorobenzene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Diethyl phthalate	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Dimethyl phthalate	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
2,4-Dichlorophenol	ND	20		µg/L	1	8/15/2018 12:23:09 PM	39765	
2,4-Dimethylphenol	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/15/2018 12:23:09 PM	39765	
2,4-Dinitrophenol	ND	20		µg/L	1	8/15/2018 12:23:09 PM	39765	
2,4-Dinitrotoluene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
2,6-Dinitrotoluene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Fluoranthene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Fluorene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Hexachlorobenzene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Hexachlorobutadiene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Hexachloroethane	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Isophorone	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
1-Methylnaphthalene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
2-Methylnaphthalene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
2-Methylphenol	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
3+4-Methylphenol	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
N-Nitrosodimethylamine	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Naphthalene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
2-Nitroaniline	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
3-Nitroaniline	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
4-Nitroaniline	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Nitrobenzene	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
2-Nitrophenol	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
4-Nitrophenol	ND	10		µg/L	1	8/15/2018 12:23:09 PM	39765	
Pentachlorophenol	ND	20		µg/L	1	8/15/2018 12:23:09 PM	39765	

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 15 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

Client Sample ID: MW-38								
ent Wells Collection Date: 8/7/2018 9:30:00 AM								
Matrix: AQUE	OUS	Received I	ate: 8	/8/2018 7:00:00 AM				
Result	PQL	Qual Uni	s Dl	F Date Analyzed	Batch			
				Analyst:	JDC			
ND	10	µg/L	1	8/15/2018 12:23:09 PM	39765			
ND	10	µg/L	1	8/15/2018 12:23:09 PM	39765			
ND	10	μg/L	1	8/15/2018 12:23:09 PM	39765			
ND	10	μg/L	1	8/15/2018 12:23:09 PM	39765			
ND	10	μg/L	1	8/15/2018 12:23:09 PM	39765			
ND	10	μg/L	1	8/15/2018 12:23:09 PM	39765			
ND	10	μg/L	1	8/15/2018 12:23:09 PM	39765			
50.3	15-74.1	%Re	ec 1	8/15/2018 12:23:09 PM	39765			
44.7	15-59.8	%Re	ec 1	8/15/2018 12:23:09 PM	39765			
64.5	22.1-112	%Re	ec 1	8/15/2018 12:23:09 PM	39765			
75.9	33.2-94	%Re	ec 1	8/15/2018 12:23:09 PM	39765			
75.8	34-90.9	%Re	ec 1	8/15/2018 12:23:09 PM	39765			
73.7	15-149	%Re	ec 1	8/15/2018 12:23:09 PM	39765			
				Analyst:	RAA			
ND	1.0	μg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	2.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	4.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	4.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	10	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	3.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	10	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	10	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	2.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	μg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	3.0	μg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	µg/L	1	8/13/2018 7:09:00 PM	R53391			
ND	1.0	μg/L	1	8/13/2018 7:09:00 PM	R53391			
	t Wells Matrix: AQUE Result ND ND ND ND ND ND ND ND ND ND	CI           t Wells         QUEOUS           Result         PQL           ND         10           ND         1.0           ND	ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         10         µg/L           ND         1.0         µg/L	ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           ND         10         µg/L         1           S0.3         15-74.1         %Rec         1           44.7         15-59.8         %Rec         1           75.8         34-90.9         %Rec         1           75.8         34-90.9         %Rec         1           ND         1.0         µg/L         1           ND         1.0         µg/L         1           ND         1.0         µg/L         1	Client Sample ID: MW-38           Collection Date: 8/7/2018 9:30:00 AM           Matrix:         AQUEOUS         Received Date: 8/8/2018 7:00:00 AM           Result         PQL         Qual         Units         DF         Date Analyzed           ND         10         µg/L         1         8/15/2018 12:23:09 PM         ND         10         µg/L         1         8/15/2018 12:23:09 PM           ND         10         µg/L         1         8/15/2018 12:23:09 PM         ND         10         µg/L         1         8/15/2018 12:23:09 PM           ND         10         µg/L         1         8/15/2018 12:23:09 PM         ND         10         µg/L         1         8/15/2018 12:23:09 PM           ND         10         µg/L         1         8/15/2018 12:23:09 PM         18         15/2018 12:23:09 PM           S0.3         15-74.1         %Rec         1         8/15/2018 12:23:09 PM         75.9         33.2-94         %Rec         1         8/15/2018 12:23:09 PM         75.8         34-90.9         %Rec         1         8/15/2018 12:23:09 PM         75.8         34-90.9         %Rec         1         8/15/2018 12:23:09 PM         75.7         75.8         34-90.9         %Rec         1			

### Hall Environmental Analysis Laboratory, Inc.

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

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
- PQL Practical Quanitative Limit
- 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 limit. Page 16 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

**Client Sample ID: MW-38** 

Project: Lab ID:	Cross Gradient and Downgrad 1808439-004	dient WellsCollection Date: 8/7/2018 9:30:00 AMMatrix: AQUEOUSReceived Date: 8/8/2018 7:00:00 AM						
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8260B: VOLATILES						Analyst	RAA
cis-1.2-D	CE	ND	1.0		ua/L	1	8/13/2018 7:09:00 PM	R53391
cis-1.3-D	vichloropropene	ND	1.0		ua/L	1	8/13/2018 7:09:00 PM	R53391
1.2-Dibro	pmo-3-chloropropane	ND	2.0		ua/L	1	8/13/2018 7:09:00 PM	R53391
Dibromo	chloromethane	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
Dibromo	methane	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,2-Dichl	orobenzene	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,3-Dichl	orobenzene	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,4-Dichl	orobenzene	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
Dichloro	difluoromethane	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,1-Dichl	oroethane	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,1-Dichl	oroethene	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,2-Dichl	oropropane	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,3-Dichl	oropropane	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
2,2-Dichl	oropropane	ND	2.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,1-Dichl	oropropene	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
Hexachlo	probutadiene	ND	1.0		μg/L	1	8/13/2018 7:09:00 PM	R53391
2-Hexan	one	ND	10		μg/L	1	8/13/2018 7:09:00 PM	R53391
Isopropy	lbenzene	ND	1.0		μg/L	1	8/13/2018 7:09:00 PM	R53391
4-Isoprop	byltoluene	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
4-Methyl	-2-pentanone	ND	10		μg/L	1	8/13/2018 7:09:00 PM	R53391
Methylen	e Chloride	ND	3.0		μg/L	1	8/13/2018 7:09:00 PM	R53391
n-Butylbe	enzene	ND	3.0		μg/L	1	8/13/2018 7:09:00 PM	R53391
n-Propyll	penzene	ND	1.0		μg/L	1	8/13/2018 7:09:00 PM	R53391
sec-Buty	lbenzene	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
Styrene		ND	1.0		μg/L	1	8/13/2018 7:09:00 PM	R53391
tert-Buty	benzene	ND	1.0		μg/L	1	8/13/2018 7:09:00 PM	R53391
1,1,1,2-T	etrachloroethane	ND	1.0		μg/L	1	8/13/2018 7:09:00 PM	R53391
1,1,2,2-T	etrachloroethane	ND	2.0		μg/L	1	8/13/2018 7:09:00 PM	R53391
Tetrachlo	proethene (PCE)	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
trans-1,2	-DCE	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
trans-1,3	-Dichloropropene	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,2,3-Trio	chlorobenzene	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,2,4-Trio	chlorobenzene	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,1,1-Trio	chloroethane	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,1,2-Trio	chloroethane	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
Trichloro	ethene (TCE)	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
Trichloro	fluoromethane	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
1,2,3-Trio	chloropropane	ND	2.0		µg/L	1	8/13/2018 7:09:00 PM	R53391
Vinyl chlo	oride	ND	1.0		µg/L	1	8/13/2018 7:09:00 PM	R53391

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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
- PQL Practical Quanitative Limit
- 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 limit Page 17 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental A	nalvcic I ahoratory	Inc

**CLIENT:** Andeavor Bloomfield

1808439-004

**Project:** 

Lab ID:

Date Reported: 8/31/2018 **Client Sample ID: MW-38** Cross Gradient and Downgradient Wells Collection Date: 8/7/2018 9:30:00 AM Matrix: AQUEOUS Received Date: 8/8/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst	RAA
Xylenes, Total	ND	1.5	µg/L	1	8/13/2018 7:09:00 PM	R53391
Surr: 1,2-Dichloroethane-d4	106	70-130	%Rec	1	8/13/2018 7:09:00 PM	R53391
Surr: 4-Bromofluorobenzene	101	70-130	%Rec	1	8/13/2018 7:09:00 PM	R53391
Surr: Dibromofluoromethane	112	70-130	%Rec	1	8/13/2018 7:09:00 PM	R53391
Surr: Toluene-d8	92.8	70-130	%Rec	1	8/13/2018 7:09:00 PM	R53391

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit. Page 18 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

CLIENT: Andeavor Bloomfield		Client Sample ID: Trip Blank								
Project: Cross Gradient and Downgradien	t Wells	Wells Collection Date:								
Lab ID: 1808439-005	Matrix:	AQUEO	OUS	Receiv	ved Dat	e: 8/8	2018 7:00:00 AM			
Analyses	R	esult	PQL	Qual	Units	DF	Date Analyzed	Batch		
EPA METHOD 8015D: GASOLINE RANGE							Analyst	AG		
Gasoline Range Organics (GRO)		ND	0.050		mg/L	1	8/10/2018 2:19:51 PM	A53346		
Surr: BFB		103	70-130		%Rec	1	8/10/2018 2:19:51 PM	A53346		
EPA METHOD 8260B: VOLATILES							Analyst	RAA		
Benzene		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Toluene		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Ethylbenzene		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Methyl tert-butyl ether (MTBE)		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1,2,4-Trimethylbenzene		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1,3,5-Trimethylbenzene		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1,2-Dichloroethane (EDC)		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1,2-Dibromoethane (EDB)		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Naphthalene		ND	2.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1-Methylnaphthalene		ND	4.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
2-Methylnaphthalene		ND	4.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Acetone		ND	10		μg/L	1	8/13/2018 7:33:00 PM	R53391		
Bromobenzene		ND	1.0		μg/L	1	8/13/2018 7:33:00 PM	R53391		
Bromodichloromethane		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Bromoform		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Bromomethane		ND	3.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
2-Butanone		ND	10		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Carbon disulfide		ND	10		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Carbon Tetrachloride		ND	1.0		ua/L	1	8/13/2018 7:33:00 PM	R53391		
Chlorobenzene		ND	1.0		ua/L	1	8/13/2018 7:33:00 PM	R53391		
Chloroethane		ND	2.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Chloroform		ND	1.0		ua/L	1	8/13/2018 7:33:00 PM	R53391		
Chloromethane		ND	3.0		ua/L	1	8/13/2018 7:33:00 PM	R53391		
2-Chlorotoluene		ND	1.0		ua/L	1	8/13/2018 7:33:00 PM	R53391		
4-Chlorotoluene		ND	1.0		ua/L	1	8/13/2018 7:33:00 PM	R53391		
cis-1.2-DCE		ND	1.0		ua/L	1	8/13/2018 7:33:00 PM	R53391		
cis-1,3-Dichloropropene		ND	1.0		ua/L	1	8/13/2018 7:33:00 PM	R5339 <sup>2</sup>		
1.2-Dibromo-3-chloropropane		ND	2.0		µg/=	1	8/13/2018 7:33:00 PM	R5339		
Dibromochloromethane		ND	1.0		ua/l	1	8/13/2018 7:33:00 PM	R5339		
Dibromomethane		ND	1.0		µg/=	1	8/13/2018 7:33:00 PM	R5339		
1.2-Dichlorobenzene		ND	1.0		ua/l	1	8/13/2018 7:33:00 PM	R5339		
1.3-Dichlorobenzene		ND	1.0		rs,⊏ ua/l	1	8/13/2018 7:33:00 PM	R5339		
1.4-Dichlorobenzene		ND	1.0		rs,⊏ ua/l	1	8/13/2018 7:33:00 PM	R5339		
Dichlorodifluoromethane		ND	1.0		rs,⊏ ua/l	1	8/13/2018 7:33:00 PM	R5339		
1 1-Dichloroethane		ND	1.0		rs,⊏ ua/l	, 1	8/13/2018 7:33:00 PM	R53301		
1 1-Dichloroethene		ND	1.0		P9/⊏ ua/l	1	8/13/2018 7:33:00 PM	R53301		
			1.0	-	P9/⊏		5, 10, 2010 1.00.00 1 W	10000		

## Hall Environmental Analysis Laboratory, Inc.

Value exceeds Maximum Contaminant Level. В Analyte detected in the associated Method Blank

D Sample Diluted Due to Matrix

**Qualifiers:** 

\*

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 19 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

CLIENT:	Andeavor Bloomfield	Client Sample ID: Trip Blank								
Project:	Cross Gradient and Downgradie	nt wells	,	Collect	ion Dat	e:				
Lab ID:	1808439-005	Matrix: AQUEOU	S	Receiv	ved Dat	<b>e:</b> 8/8	3/2018 7:00:00 AM			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch		
EPA MET	HOD 8260B: VOLATILES						Analyst	RAA		
1,2-Dichl	oropropane	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1,3-Dichl	oropropane	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
2,2-Dichl	oropropane	ND	2.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1,1-Dichl	oropropene	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Hexachlo	probutadiene	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
2-Hexand	one	ND	10		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Isopropy	lbenzene	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
4-Isoprop	byltoluene	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
4-Methyl-	-2-pentanone	ND	10		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Methylen	e Chloride	ND	3.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
n-Butylbe	enzene	ND	3.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
n-Propylk	penzene	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
sec-Buty	lbenzene	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Styrene		ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
tert-Butyl	benzene	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1,1,1,2-T	etrachloroethane	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1,1,2,2-T	etrachloroethane	ND	2.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Tetrachlo	proethene (PCE)	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
trans-1,2	-DCE	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
trans-1,3	-Dichloropropene	ND	1.0		μg/L	1	8/13/2018 7:33:00 PM	R53391		
1,2,3-Trio	chlorobenzene	ND	1.0		μg/L	1	8/13/2018 7:33:00 PM	R53391		
1,2,4-Tric	chlorobenzene	ND	1.0		μg/L	1	8/13/2018 7:33:00 PM	R53391		
1,1,1-Tric	chloroethane	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1,1,2-Tric	chloroethane	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Trichloro	ethene (TCE)	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Trichloro	fluoromethane	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
1,2,3-Trio	chloropropane	ND	2.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Vinyl chlo	oride	ND	1.0		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Xylenes,	Total	ND	1.5		µg/L	1	8/13/2018 7:33:00 PM	R53391		
Surr: 1	,2-Dichloroethane-d4	103	70-130		%Rec	1	8/13/2018 7:33:00 PM	R53391		
Surr: 4	I-Bromofluorobenzene	101	70-130		%Rec	1	8/13/2018 7:33:00 PM	R53391		
Surr: D	Dibromofluoromethane	108	70-130		%Rec	1	8/13/2018 7:33:00 PM	R53391		
Surr: 1	Foluene-d8	93.0	70-130		%Rec	1	8/13/2018 7:33:00 PM	R53391		

Hall Environmental Analysis Laboratory, Inc.

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

- \* Value exceeds Maximum Contaminant Level.
  - Sample Diluted Due to Matrix D

**Qualifiers:** 

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 20 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

Client Sample ID: MW-37

Date Reported: 8/31/2018

Project: Lab ID:	Cross Gradient and Downgradient	Wells Matrix: AOUE	OUS	Collecti Receiv	ion Date	: 8/7 • 8/8	7/2018 10:10:00 AM	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
							Applyct	· Irm
	HOD 8013D. DIESEL RANGE		0.40					
Diesel R	ange Organics (DRO)	ND	0.40		mg/L	1	8/13/2018 3:18:44 PM	39725
Notor OI	I Range Organics (MRO)	ND	2.5		mg/∟ % Dee	1	8/13/2018 3:18:44 PM	39725
Surr: I		117	76.6-135		%Rec	1	8/13/2018 3:18:44 PM	39725
CARBON							Analyst	JRR
Total Ca	rbon Dioxide	640	1.0	Н	mg CO2	/ 1	8/15/2018 5:34:41 PM	R53469
EPA MET	THOD 300.0: ANIONS						Analyst	smb
Fluoride		0.44	0.10		mg/L	1	8/13/2018 12:32:03 PM	R53415
Chloride		180	10		mg/L	20	8/13/2018 12:44:27 PM	R53415
Bromide		2.6	0.10		mg/L	1	8/13/2018 12:32:03 PM	R53415
Phospho	orus, Orthophosphate (As P)	ND	0.50	Н	mg/L	1	8/13/2018 12:32:03 PM	R53415
Sulfate		420	10		mg/L	20	8/13/2018 12:44:27 PM	R53415
Nitrate+N	Nitrite as N	ND	1.0		mg/L	5	8/13/2018 3:25:48 PM	R53415
SM2320E	3: ALKALINITY						Analyst	JRR
Bicarbor	nate (As CaCO3)	703.0	20.00		mg/L Ca	1	8/15/2018 5:34:41 PM	R53469
Carbona	te (As CaCO3)	ND	2.000		mg/L Ca	1	8/15/2018 5:34:41 PM	R53469
Total Alk	alinity (as CaCO3)	703.0	20.00		mg/L Ca	1	8/15/2018 5:34:41 PM	R53469
EPA MET	THOD 7470: MERCURY						Analyst	rde
Mercury		ND	0.00020		mg/L	1	8/29/2018 11:48:56 AM	40027
EPA MET	THOD 7470: MERCURY						Analyst	rde
Mercury		ND	0.00020	Filtered	ma/L	1	8/29/2018 11:51:07 AM	40027
		S			0		Analyst	nmf
Arsenic		ND	0 020		ma/l	1	8/20/2018 2:16:33 PM	A53550
Barium		0.079	0.020		ma/l	1	8/20/2018 2:16:33 PM	A53550
Cadmiur	n	ND	0.0020		ma/l	1	8/20/2018 2:16:33 PM	A53550
Calcium		120	5.0020		ma/l	5	8/20/2018 2:46:17 PM	A53550
Chromiu	m	ND	0.0060		ma/l	1	8/20/2018 2:16:33 PM	A53550
Conner		ND	0.0060		ma/l	1	8/20/2018 2:16:33 PM	A53550
Iron		0.20	0.0000		ma/l	1	8/20/2018 2:16:33 PM	A53550
Lead		0.20 ND	0.020		ma/l	1	8/20/2018 5:26:11 PM	R53550
Magnesi	um	21	1.0		ma/l	1	8/20/2018 2:16:33 PM	A53550
Mandan	250	11	0.010		ma/l	5	8/20/2018 2:46:17 PM	A53550
Potassiu	m	27	1.0		ma/l	1	8/20/2018 2:16:33 PM	A53550
Seleniun	 0		0.050		ma/l	1	8/20/2018 2:16:33 PM	A52550
Silver			0.000		ma/l	1	8/20/2018 5·26·11 PM	R53550
Sodium		430	5.0000		ma/l	5	8/20/2018 2·46·17 PM	A53550
Uranium			0.0		ma/l	1	8/20/2018 2:16:33 PM	A53550
Craman		110	0.10				3, _0, _0, _0, 2, 10,00 / W	,

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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

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
  - PQL Practical Quanitative Limit
  - 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 limit. Page 21 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

. .....

Date Reported: 8/31/2018

CLIENT:	Andeavor Bloomfield		Client Sample ID: MW-37								
Project:	Cross Gradient and Downg	radient Wells	Col	lection Dat	<b>e:</b> 8/′	7/2018 10:10:00 AM					
Lab ID:	1808439-006	Matrix: AQUE	DUS Re	eceived Dat	e: 8/3	8/2018 7:00:00 AM					
Analyses		Result	PQL Q	ual Units	DF	Date Analyzed	Batch				
	THOD 6010B: DISSOLVED	METALS				Analyst	: pmf				
Zinc		ND	0.020	mg/L	1	8/20/2018 2:16:33 PM	A53550				
EPA 601	0B: TOTAL RECOVERABLI	E METALS				Analyst	pmf				
Arsenic		ND	0.020	ma/L	1	8/13/2018 4:35:04 PM	- 39719				
Barium		0.10	0.020	mg/L	1	8/13/2018 1:19:40 PM	39719				
Cadmiur	n	ND	0.0020	mg/L	1	8/13/2018 1:19:40 PM	39719				
Chromiu	m	ND	0.0060	mg/L	1	8/13/2018 1:19:40 PM	39719				
Lead		ND	0.0050	mg/L	1	8/13/2018 1:19:40 PM	39719				
Seleniun	n	ND	0.050	mg/L	1	8/13/2018 1:19:40 PM	39719				
Silver		ND	0.0050	mg/L	1	8/13/2018 1:19:40 PM	39719				
EPA MET	THOD 8015D: GASOLINE R	ANGE				Analyst	AG				
Gasoline	e Range Organics (GRO)	ND	0.050	mg/L	1	8/10/2018 2:43:08 PM	A53346				
Surr: I	BFB	107	70-130	%Rec	1	8/10/2018 2:43:08 PM	A53346				
EPA MET	THOD 8260B: VOLATILES					Analyst	RAA				
Benzene	)	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Toluene		ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Ethylben	izene	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Methyl te	ert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
1,2,4-Tri	methylbenzene	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
1,3,5-Tri	methylbenzene	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
1,2-Dich	loroethane (EDC)	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
1,2-Dibro	omoethane (EDB)	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Naphtha	lene	ND	2.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
1-Methyl	naphthalene	ND	4.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
2-Methyl	naphthalene	ND	4.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Acetone		ND	10	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Bromobe	enzene	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Bromodi	chloromethane	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Bromofo	rm	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Bromom	ethane	ND	3.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
2-Butano	one	ND	10	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Carbon of	disulfide	ND	10	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Carbon <sup>-</sup>	Tetrachloride	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Chlorobe	enzene	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Chloroet	hane	ND	2.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Chlorofo	rm	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
Chlorom	ethane	ND	3.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
2-Chloro	toluene	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
4-Chloro	toluene	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				
4-Chloro	toluene	ND	1.0	µg/L	1	8/13/2018 7:57:00 PM	R53391				

### Hall Environmental Analysis Laboratory, Inc.

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

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
- PQL Practical Quanitative Limit
- 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 limit. Page 22 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

Client Sample ID: MW-37

Project: Lab ID:	Cross Gradient and Downgrad 1808439-006	wngradient Wells Collection Date: 8/7/2018 10:10:00 AM Matrix: AQUEOUS Received Date: 8/8/2018 7:00:00 AM							
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch	
EPA MET	THOD 8260B: VOLATILES						Analyst	RAA	
cis-1.2-D	)CF	ND	1.0		ua/l	1	8/13/2018 7:57:00 PM	R53391	
cis-1.3-D	Dichloropropene	ND	1.0		ua/L	1	8/13/2018 7:57:00 PM	R53391	
1,2-Dibro	omo-3-chloropropane	ND	2.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
Dibromo	chloromethane	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
Dibromo	methane	ND	1.0		μg/L	1	8/13/2018 7:57:00 PM	R53391	
1,2-Dich	lorobenzene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,3-Dich	lorobenzene	ND	1.0		μg/L	1	8/13/2018 7:57:00 PM	R53391	
1,4-Dich	lorobenzene	ND	1.0		μg/L	1	8/13/2018 7:57:00 PM	R53391	
Dichloro	difluoromethane	ND	1.0		μg/L	1	8/13/2018 7:57:00 PM	R53391	
1,1-Dich	loroethane	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,1-Dich	loroethene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,2-Dich	loropropane	ND	1.0		μg/L	1	8/13/2018 7:57:00 PM	R53391	
1,3-Dich	loropropane	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
2,2-Dich	loropropane	ND	2.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,1-Dich	loropropene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
Hexachle	orobutadiene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
2-Hexan	one	ND	10		µg/L	1	8/13/2018 7:57:00 PM	R53391	
Isopropy	lbenzene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
4-Isopro	pyltoluene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
4-Methyl	-2-pentanone	ND	10		µg/L	1	8/13/2018 7:57:00 PM	R53391	
Methyler	ne Chloride	ND	3.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
n-Butylb	enzene	ND	3.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
n-Propyl	benzene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
sec-Buty	lbenzene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
Styrene		ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
tert-Buty	lbenzene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,1,1,2-1	Tetrachloroethane	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,1,2,2-1	Fetrachloroethane	ND	2.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
Tetrachle	oroethene (PCE)	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
trans-1,2	2-DCE	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
trans-1,3	3-Dichloropropene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,2,3-Tri	chlorobenzene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,2,4-Tri	chlorobenzene	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,1,1-Tri	chloroethane	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,1,2-Tri	chloroethane	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
Trichloro	ethene (TCE)	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
Trichloro	fluoromethane	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
1,2,3-Tri	chloropropane	ND	2.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	
Vinyl chl	oride	ND	1.0		µg/L	1	8/13/2018 7:57:00 PM	R53391	

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

Qualifiers: *	Value exceeds Maximum	Contaminant Level.
---------------	-----------------------	--------------------

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit Page 23 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Hall Environmental Analysis Laboratory, I	nc.
Hun Environnun innurysis Euborutory,	110.

**CLIENT:** Andeavor Bloomfield

Date Reported: 8/31/2018
Client Sample ID: MW-37

oss Gradient and Downgradi	tient Wells Collection Date: 8/7/2018 10:10:00 AM						
08439-006	Matrix: AQUEOU	S Rec	eived Dat	e: 8/8	8/2018 7:00:00 AM		
	Result	PQL Qu	al Units	DF	Date Analyzed	Batch	
D 8260B: VOLATILES					Analyst:	RAA	
al	ND	1.5	µg/L	1	8/13/2018 7:57:00 PM	R53391	
Dichloroethane-d4	104	70-130	%Rec	1	8/13/2018 7:57:00 PM	R53391	
omofluorobenzene	102	70-130	%Rec	1	8/13/2018 7:57:00 PM	R53391	
mofluoromethane	110	70-130	%Rec	1	8/13/2018 7:57:00 PM	R53391	
ene-d8	93.7	70-130	%Rec	1	8/13/2018 7:57:00 PM	R53391	
	DSS Gradient and Downgradi D8439-006 D 8260B: VOLATILES al Dichloroethane-d4 Dichlorobenzene Dimofluorobenzene Dimofluoromethane Dene-d8	All ND All ND	CollectionCollection08439-006Matrix: AQUEOUSRecResultPQLQueousD 8260B: VOLATILESND1.5alND1.5Dichloroethane-d410470-130omofluorobenzene10270-130omofluoromethane11070-130one-d893.770-130	Result     PQL     Qual     Units       D8260B: VOLATILES     ND     1.5     µg/L       al     ND     1.5     µg/L       bichloroethane-d4     104     70-130     %Rec       omofluorobenzene     102     70-130     %Rec       ene-d8     93.7     70-130     %Rec	Result     PQL     Qual     Units     DF       D8439-006     Matrix: AQUEOUS     Received Date: 8/5       Result     PQL     Qual     Units     DF       D 8260B: VOLATILES     ND     1.5     µg/L     1       Dichloroethane-d4     104     70-130     %Recc     1       Dimofluorobenzene     102     70-130     %Rec     1       Dene-d8     93.7     70-130     %Rec     1	Collection Date:       8/7/2018       10:10:00 AM         O8439-006       Matrix:       AQUEOUS       Received Date:       8/8/2018       7:00:00 AM         Result       PQL       Qual       Units       DF       Date Analyzed         D 8260B:       VOLATILES       Analyst:       Analyst:         al       ND       1.5       µg/L       1       8/13/2018       7:57:00 PM         Dichloroethane-d4       104       70-130       %Rec       1       8/13/2018       7:57:00 PM         Imofluorobenzene       102       70-130       %Rec       1       8/13/2018       7:57:00 PM         Imofluoromethane       110       70-130       %Rec       1       8/13/2018       7:57:00 PM         Imofluoromethane       110       70-130       %Rec       1       8/13/2018       7:57:00 PM	

- \* 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
- PQL Practical Quanitative Limit
- 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 Page 24 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

Project: Lab ID:	Cross Gradient and Downgradient 1808439-007	Wells Matrix: AOUE	OUS	Collecti Receiv	ion Date ved Date	: 8/7 : 8/8	7/2018 10:45:00 AM 8/2018 7:00:00 AM	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015D: DIESEL RANGE						Analyst	Irm
Diesel R	ange Organics (DRO)	ND	0.40		ma/L	1	8/13/2018 3:43:13 PM	39725
Motor Oi	I Range Organics (MRO)	ND	2.5		mg/L	1	8/13/2018 3:43:13 PM	39725
Surr: I	DNOP	102	76.6-135		%Rec	1	8/13/2018 3:43:13 PM	39725
CARBON	IDIOXIDE						Analyst	JRR
Total Ca	rbon Dioxide	940	1.0	н	mg CO2	/ 1	8/15/2018 5:59:54 PM	R53469
EPA MET	THOD 300.0: ANIONS						Analyst	smb
Fluoride		ND	0.50		mg/L	5	8/13/2018 12:56:51 PM	R53415
Chloride		210	10		mg/L	20	8/13/2018 1:09:17 PM	R53415
Bromide		2.8	0.50		mg/L	5	8/13/2018 12:56:51 PM	R53415
Phospho	orus, Orthophosphate (As P)	ND	2.5	н	mg/L	5	8/13/2018 12:56:51 PM	R53415
Sulfate		16	2.5		mg/L	5	8/13/2018 12:56:51 PM	R53415
Nitrate+N	Nitrite as N	ND	1.0		mg/L	5	8/13/2018 3:38:13 PM	R53415
SM2320E	3: ALKALINITY						Analyst	JRR
Bicarbor	nate (As CaCO3)	1004	20.00		mg/L Ca	1	8/15/2018 5:59:54 PM	R53469
Carbona	te (As CaCO3)	ND	2.000		mg/L Ca	1	8/15/2018 5:59:54 PM	R53469
Total Alk	alinity (as CaCO3)	1004	20.00		mg/L Ca	1	8/15/2018 5:59:54 PM	R53469
EPA MET	THOD 7470: MERCURY						Analyst	rde
Mercury		ND	0.00020		mg/L	1	8/29/2018 11:53:19 AM	40027
EPA MET	THOD 7470: MERCURY						Analyst	rde
Mercury		ND	0.00020	Filtered	mg/L	1	8/29/2018 11:55:31 AM	40027
EPA MET	HOD 6010B: DISSOLVED METAL	S					Analyst	pmf
Arsenic		ND	0.020		ma/L	1	8/27/2018 2:42:59 PM	A53717
Barium		0.79	0.020		ma/L	1	8/20/2018 2:18:21 PM	A53550
Cadmiur	n	ND	0.0020		ma/L	1	8/20/2018 2:18:21 PM	A53550
Calcium		120	5.0		ma/L	5	8/20/2018 2:48:05 PM	A53550
Chromiu	m	ND	0.0060		ma/L	1	8/20/2018 2:18:21 PM	A53550
Copper		ND	0.0060		ma/L	1	8/20/2018 2:18:21 PM	A53550
Iron		0.13	0.020		ma/L	1	8/20/2018 2:18:21 PM	A53550
Lead		ND	0.0050		ma/L	1	8/20/2018 5:27:54 PM	B53550
Magnesi	um	22	1.0		ma/L	1	8/20/2018 2:18:21 PM	A53550
Mangane	ese	1.9	0.010		ma/L	5	8/20/2018 2:48:05 PM	A53550
Potassiu	m	2.9	1.0		ma/L	1	8/20/2018 2:18:21 PM	A53550
Seleniun	n	ND	0.050		ma/L	1	8/27/2018 2:42:59 PM	A53717
Silver		ND	0.0050		ma/L	1	8/20/2018 5:27:54 PM	B53550
Sodium		380	5.0		ma/L	5	8/20/2018 2:48:05 PM	A53550
Uranium		ND	0.10		mg/L	1	8/20/2018 2:18:21 PM	A53550

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

**Client Sample ID: MW-35** Collection Dates 9/7/2019 10.45.00 AM

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

**Qualifiers:** \* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
  - Н Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quanitative Limit
  - % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 25 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Date Reported: 8/31/2018

CLIENT: Andeavor Bloomfield				Client Sample ID: MW-35						
Project:	Cross Gradient and Downs	gradient Wells	Collection Date: 8/7/2018 10:45:00 AM							
Lab ID:	1808439-007	Matrix: AQUE	DUS	Received	l Date: 8	3/8/2018 7:00:00 AM				
Analyses		Result	PQL	Qual U	nits D	F Date Analyzed	Batch			
EPA MET	THOD 6010B: DISSOLVED	METALS				Analyst:	pmf			
Zinc		ND	0.020	rr	ng/L 1	8/20/2018 2:18:21 PM	A53550			
EPA 6010	0B: TOTAL RECOVERABL	E METALS				Analyst:	pmf			
Arsenic		ND	0.020	m	na/L 1	8/13/2018 4:36:30 PM	- 39719			
Barium		0.94	0.020	rr	ng/L 1	8/13/2018 1:26:59 PM	39719			
Cadmiun	n	ND	0.0020	rr	ng/L 1	8/13/2018 1:26:59 PM	39719			
Chromiu	m	ND	0.0060	rr	ng/L 1	8/13/2018 1:26:59 PM	39719			
Lead		ND	0.0050	m	ng/L 1	8/13/2018 1:26:59 PM	39719			
Selenium	n	ND	0.050	rr	ng/L 1	8/13/2018 1:26:59 PM	39719			
Silver		ND	0.0050	rr	ng/L 1	8/13/2018 1:26:59 PM	39719			
EPA MET	THOD 8015D: GASOLINE R	ANGE				Analyst:	AG			
Gasoline	e Range Organics (GRO)	0.30	0.050	rr	ng/L 1	8/10/2018 3:06:14 PM	A53346			
Surr: E	BFB	110	70-130	%	SRec 1	8/10/2018 3:06:14 PM	A53346			
EPA MET	THOD 8260B: VOLATILES					Analyst:	RAA			
Benzene	)	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Toluene		ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Ethylben	izene	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Methyl te	ert-butyl ether (MTBE)	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
1,2,4-Tri	methylbenzene	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
1,3,5-Tri	methylbenzene	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
1,2-Dichl	loroethane (EDC)	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
1,2-Dibro	omoethane (EDB)	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Naphtha	lene	ND	2.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
1-Methyl	naphthalene	ND	4.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
2-Methyl	naphthalene	ND	4.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Acetone		11	10	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Bromobe	enzene	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Bromodi	chloromethane	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Bromofo	rm	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Bromom	ethane	ND	3.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
2-Butanc	one	ND	10	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Carbon o	disulfide	ND	10	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Carbon 7	Tetrachloride	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Chlorobe	enzene	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Chloroet	hane	ND	2.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Chlorofo	rm	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
Chlorom	ethane	ND	3.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
2-Chloro	toluene	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			
4-Chloro	toluene	ND	1.0	μ	g/L 1	8/13/2018 8:21:00 PM	R53391			

Hall Environmental Analysis Laboratory, Inc.

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

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

**Qualifiers:** 

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 26 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

Client Sample ID: MW-35

Project: Lab ID:	Cross Gradient and Downgrad 1808439-007	adient WellsCollection Date: 8/7/2018 10:45:00 AMMatrix: AQUEOUSReceived Date: 8/8/2018 7:00:00 AM						
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	THOD 8260B: VOLATILES						Analyst	RAA
cis-1.2-D	DCE	ND	1.0		ua/L	1	8/13/2018 8:21:00 PM	R53391
cis-1.3-D	Dichloropropene	ND	1.0		µa/L	1	8/13/2018 8:21:00 PM	R53391
1,2-Dibro	omo-3-chloropropane	ND	2.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
Dibromo	chloromethane	ND	1.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
Dibromo	methane	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
1,2-Dichl	lorobenzene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
1,3-Dichl	lorobenzene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
1,4-Dichl	lorobenzene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
Dichloro	difluoromethane	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
1,1-Dichl	loroethane	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
1,1-Dichl	loroethene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
1,2-Dichl	loropropane	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
1,3-Dichl	loropropane	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
2,2-Dichl	loropropane	ND	2.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
1,1-Dichl	loropropene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
Hexachlo	probutadiene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
2-Hexan	one	ND	10		μg/L	1	8/13/2018 8:21:00 PM	R53391
Isopropy	lbenzene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
4-Isopror	pyltoluene	ND	1.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
4-Methyl	-2-pentanone	ND	10		μg/L	1	8/13/2018 8:21:00 PM	R53391
Methyler	ne Chloride	ND	3.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
n-Butylbe	enzene	ND	3.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
n-Propyll	benzene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
sec-Buty	lbenzene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
Styrene		ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
tert-Buty	Ibenzene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
1,1,1,2-T	etrachloroethane	ND	1.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
1,1,2,2-T	etrachloroethane	ND	2.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
Tetrachlo	oroethene (PCE)	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
trans-1,2	2-DCE	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
trans-1,3	B-Dichloropropene	ND	1.0		μg/L	1	8/13/2018 8:21:00 PM	R53391
1,2,3-Tri	chlorobenzene	ND	1.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
1,2,4-Tri	chlorobenzene	ND	1.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
1,1,1-Tri	chloroethane	ND	1.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
1,1,2-Tri	chloroethane	ND	1.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
Trichloro	ethene (TCE)	ND	1.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
Trichloro	fluoromethane	ND	1.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
1,2,3-Tri	chloropropane	ND	2.0		µg/L	1	8/13/2018 8:21:00 PM	R53391
Vinyl chl	oride	ND	1.0		µg/L	1	8/13/2018 8:21:00 PM	R53391

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

Qualifiers: *	Value exceeds Maximum	Contaminant Level.
---------------	-----------------------	--------------------

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 27 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Hall Environmental Analysis Laboratory. Inc.	
Hun Lin in on nonul in any sis Lubor ator y, inc.	

Date Reported: 8/31/2018
Client Sample ID: MW-35

CLIENT:	Andeavor Bloomfield			Cl	ient Sa	mple II	<b>):</b> M\	W-35	
Project:	Cross Gradient and Downgradien	t Wells		(	Collecti	ion Date	e: 8/7	/2018 10:45:00 AM	
Lab ID:	1808439-007	Matrix: AQUEOUS Received Date: 8/8/2018 7:00:00 AM							
Analyses		R	esult	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8260B: VOLATILES							Analyst:	RAA
Xylenes,	Total		ND	1.5		µg/L	1	8/13/2018 8:21:00 PM	R53391
Surr: 1	,2-Dichloroethane-d4		104	70-130		%Rec	1	8/13/2018 8:21:00 PM	R53391
Surr: 4	l-Bromofluorobenzene		103	70-130		%Rec	1	8/13/2018 8:21:00 PM	R53391
Surr: D	Dibromofluoromethane		106	70-130		%Rec	1	8/13/2018 8:21:00 PM	R53391
Surr: T	Toluene-d8		92.9	70-130		%Rec	1	8/13/2018 8:21:00 PM	R53391

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

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
- PQL Practical Quanitative Limit
- 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 Page 28 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: Equipment Blank Collection Date: 8/7/2018 11:05:00 AM

Project:Cross Gradient and Downgradient WellsLab ID:1808439-008Matrix: AQUEOUS

**CLIENT:** Andeavor Bloomfield

Received Date: 8/8/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst	Irm
Diesel Range Organics (DRO)	ND	0.40		mg/L	1	8/13/2018 4:07:51 PM	39725
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/13/2018 4:07:51 PM	39725
Surr: DNOP	107	76.6-135		%Rec	1	8/13/2018 4:07:51 PM	39725
CARBON DIOXIDE						Analyst	JRR
Total Carbon Dioxide	9.8	1.0	Н	mg CO2/	1	8/15/2018 6:34:04 PM	R53469
EPA METHOD 300.0: ANIONS						Analyst	smb
Fluoride	ND	0.10		mg/L	1	8/13/2018 1:21:42 PM	R53415
Chloride	ND	0.50		mg/L	1	8/13/2018 1:21:42 PM	R53415
Bromide	ND	0.10		mg/L	1	8/13/2018 1:21:42 PM	R53415
Phosphorus, Orthophosphate (As P)	ND	0.50	Н	mg/L	1	8/13/2018 1:21:42 PM	R53415
Sulfate	ND	0.50		mg/L	1	8/13/2018 1:21:42 PM	R53415
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/13/2018 3:50:38 PM	R53415
SM2320B: ALKALINITY						Analyst	JRR
Bicarbonate (As CaCO3)	ND	20.00		mg/L Ca	1	8/15/2018 6:34:04 PM	R53469
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	8/15/2018 6:34:04 PM	R53469
Total Alkalinity (as CaCO3)	ND	20.00		mg/L Ca	1	8/15/2018 6:34:04 PM	R53469
EPA METHOD 7470: MERCURY						Analyst	rde
Mercury	ND	0.00020		mg/L	1	8/29/2018 11:57:44 AM	40027
EPA METHOD 7470: MERCURY						Analyst	rde
Mercury	ND	0.00020 F	Filtered	mg/L	1	8/29/2018 12:04:34 PM	40027
EPA METHOD 6010B: DISSOLVED METALS						Analyst	pmf
Arsenic	ND	0.020		mg/L	1	8/20/2018 2:20:10 PM	A53550
Barium	ND	0.020		mg/L	1	8/20/2018 2:20:10 PM	A53550
Cadmium	ND	0.0020		mg/L	1	8/20/2018 2:20:10 PM	A53550
Calcium	ND	1.0		mg/L	1	8/20/2018 2:20:10 PM	A53550
Chromium	ND	0.0060		mg/L	1	8/20/2018 2:20:10 PM	A53550
Copper	ND	0.0060		mg/L	1	8/20/2018 2:20:10 PM	A53550
Iron	ND	0.020		mg/L	1	8/20/2018 2:20:10 PM	A53550
Lead	ND	0.0050		mg/L	1	8/27/2018 5:32:29 PM	B53717
Magnesium	ND	1.0		mg/L	1	8/20/2018 2:20:10 PM	A53550
Manganese	ND	0.0020		mg/L	1	8/20/2018 2:20:10 PM	A53550
Potassium	ND	1.0		mg/L	1	8/20/2018 2:20:10 PM	A53550
Selenium	ND	0.050		mg/L	1	8/20/2018 2:20:10 PM	A53550
Silver	ND	0.0050		mg/L	1	8/20/2018 5:29:35 PM	B53550
Sodium	ND	1.0		mg/L	1	8/20/2018 2:20:10 PM	A53550
Uranium	ND	0.10		mg/L	1	8/20/2018 2:20:10 PM	A53550

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

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
  - PQL Practical Quanitative Limit
  - 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 Page 29 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

Project: Cross Gradient and Downgradient Wells

Client Sample ID: Equipment Blank Collection Date: 8/7/2018 11:05:00 AM

Lab ID: 1808439-008	Aatrix: AQUE	<b>Received Date:</b> 8/8/2018 7:00:00 AM					
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch	
EPA METHOD 6010B: DISSOLVED METALS	5				Analyst	: pmf	
Zinc	ND	0.020	mg/L	1	8/20/2018 2:20:10 PM	A53550	
EPA 6010B: TOTAL RECOVERABLE META	_S				Analyst	: pmf	
Arsenic	ND	0.020	mg/L	1	8/13/2018 4:37:56 PM	- 39719	
Barium	ND	0.020	mg/L	1	8/13/2018 1:28:41 PM	39719	
Cadmium	ND	0.0020	mg/L	1	8/13/2018 1:28:41 PM	39719	
Chromium	ND	0.0060	mg/L	1	8/13/2018 1:28:41 PM	39719	
Lead	ND	0.0050	mg/L	1	8/13/2018 8:42:29 PM	39719	
Selenium	ND	0.050	mg/L	1	8/13/2018 1:28:41 PM	39719	
Silver	ND	0.0050	mg/L	1	8/13/2018 1:28:41 PM	39719	
EPA METHOD 8015D: GASOLINE RANGE					Analyst	AG	
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/10/2018 3:29:22 PM	A53346	
Surr: BFB	103	70-130	%Rec	1	8/10/2018 3:29:22 PM	A53346	
EPA METHOD 8260B: VOLATILES					Analyst	RAA	
Benzene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Toluene	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
Ethylbenzene	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
1,2,4-Trimethylbenzene	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
1,3,5-Trimethylbenzene	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
1,2-Dichloroethane (EDC)	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
1,2-Dibromoethane (EDB)	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
Naphthalene	ND	2.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1-Methylnaphthalene	ND	4.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
2-Methylnaphthalene	ND	4.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Acetone	ND	10	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Bromobenzene	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
Bromodichloromethane	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
Bromoform	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Bromomethane	ND	3.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
2-Butanone	ND	10	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Carbon disulfide	ND	10	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Carbon Tetrachloride	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Chlorobenzene	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
Chloroethane	ND	2.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
Chloroform	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Chloromethane	ND	3.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
2-Chlorotoluene	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
4-Chlorotoluene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	

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

**Oualifiers:** \* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 30 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Client Sample ID: Equipment Blank

Collection Date: 8/7/2018 11:05:00 AM

Lab ID: 1808439-008	Matrix: AQUEC	DUS	<b>Received Date:</b> 8/8/2018 7:00:00 AM				
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch	
EPA METHOD 8260B: VOLATILES					Analysi	: RAA	
cis-1,2-DCE	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
cis-1,3-Dichloropropene	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
1,2-Dibromo-3-chloropropane	ND	2.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
Dibromochloromethane	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
Dibromomethane	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,2-Dichlorobenzene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,3-Dichlorobenzene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,4-Dichlorobenzene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Dichlorodifluoromethane	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,1-Dichloroethane	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,1-Dichloroethene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,2-Dichloropropane	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,3-Dichloropropane	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
2,2-Dichloropropane	ND	2.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,1-Dichloropropene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Hexachlorobutadiene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
2-Hexanone	ND	10	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Isopropylbenzene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
4-Isopropyltoluene	ND	1.0	μg/L	1	8/13/2018 8:45:00 PM	R53391	
4-Methyl-2-pentanone	ND	10	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Methylene Chloride	ND	3.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
n-Butylbenzene	ND	3.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
n-Propylbenzene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
sec-Butylbenzene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Styrene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
tert-Butylbenzene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
trans-1,2-DCE	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,1,1-Trichloroethane	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,1,2-Trichloroethane	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Trichloroethene (TCE)	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Trichlorofluoromethane	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
1,2,3-Trichloropropane	ND	2.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	
Vinyl chloride	ND	1.0	µg/L	1	8/13/2018 8:45:00 PM	R53391	

## Hall Environmental Analysis Laboratory, Inc.

Cross Gradient and Downgradient Wells

**CLIENT:** Andeavor Bloomfield

**Project:** 

Lab ID:

.

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

4	k	Value exceeds	Maximum	Contaminant	Level.
---	---	---------------	---------	-------------	--------

D Sample Diluted Due to Matrix

**Oualifiers:** 

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limit. Page 31 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

<b>CLIENT:</b>	<b>LIENT:</b> Andeavor Bloomfield <b>Client Sample ID:</b> Equipment Blank						uipment Blank		
Project:	Cross Gradient and Downgradie	ent Wells		(	Collecti	ion Date	e: 8/7	/2018 11:05:00 AM	
Lab ID:	1808439-008	Matrix:	Matrix: AQUEOUS Received Date: 8/8/2018 7:00:00 AM						
Analyses		R	esult	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8260B: VOLATILES							Analyst:	RAA
Xylenes,	Total		ND	1.5		µg/L	1	8/13/2018 8:45:00 PM	R53391
Surr: 1	,2-Dichloroethane-d4		105	70-130		%Rec	1	8/13/2018 8:45:00 PM	R53391
Surr: 4	-Bromofluorobenzene		102	70-130		%Rec	1	8/13/2018 8:45:00 PM	R53391
Surr: D	Dibromofluoromethane		109	70-130		%Rec	1	8/13/2018 8:45:00 PM	R53391
Surr: T	oluene-d8		93.6	70-130		%Rec	1	8/13/2018 8:45:00 PM	R53391

# Hall Environmental Analysis Laboratory, Inc.

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 32 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
**Client Sample ID:** MW-12

Date Reported: 8/31/2018

Project: Lab ID:	Cross Gradient and Downgradient	Wells Matrix: AOUF	OUS	Collecti Receiv	ion Date red Date	:8/7 ·8/8	7/2018 12:10:00 PM 8/2018 7:00:00 AM	
Analyses	1000+37 007	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
	HOD 8015D: DIESEL RANGE						Analyst	· Irm
			0.40		ma/l	1	9/12/2019 4·22·22 DM	20725
Motor Oi	L Range Organics (MRO)		2.5		mg/L	י 1	8/13/2018 4:32:23 PM	30725
Surr I		108	76 6-135		mg/∟ %Rec	1	8/13/2018 4:32:23 PM	39725
CARBON		100	10.0 100		/01/00	•	Analyst	JRR
Total Ca	rbon Dioxide	140	1.0	н	mg CO2	/ 1	8/15/2018 6:40:14 PM	R53469
EPA MET	THOD 300.0: ANIONS				-		Analyst	: smb
Fluoride		0.31	0.10		mg/L	1	8/13/2018 1:46:30 PM	R53415
Chloride		3.5	0.50		mg/L	1	8/13/2018 1:46:30 PM	R53415
Bromide		ND	0.10		mg/L	1	8/13/2018 1:46:30 PM	R53415
Phospho	orus, Orthophosphate (As P)	ND	0.50	н	mg/L	1	8/13/2018 1:46:30 PM	R53415
Sulfate		45	10		mg/L	20	8/13/2018 1:58:55 PM	R53415
Nitrate+N	Nitrite as N	ND	1.0		mg/L	5	8/13/2018 4:03:02 PM	R53415
SM2320E	3: ALKALINITY						Analyst	: JRR
Bicarbor	nate (As CaCO3)	155.4	20.00		mg/L Ca	1	8/15/2018 6:40:14 PM	R53469
Carbona	te (As CaCO3)	ND	2.000		mg/L Ca	1	8/15/2018 6:40:14 PM	R53469
Total Alk	alinity (as CaCO3)	155.4	20.00		mg/L Ca	1	8/15/2018 6:40:14 PM	R53469
EPA MET	THOD 7470: MERCURY						Analyst	: rde
Mercury		ND	0.00020		mg/L	1	8/29/2018 12:06:48 PM	40027
EPA MET	THOD 7470: MERCURY						Analyst	: rde
Mercury		ND	0.00020	Filtered	mg/L	1	8/29/2018 12:09:02 PM	40027
EPA MET	THOD 6010B: DISSOLVED METAL	S					Analyst	: pmf
Arsenic		ND	0.020		mg/L	1	8/20/2018 2:22:10 PM	A53550
Barium		0.038	0.020		mg/L	1	8/20/2018 2:22:10 PM	A53550
Cadmiur	n	ND	0.0020		mg/L	1	8/20/2018 2:22:10 PM	A53550
Calcium		42	1.0		mg/L	1	8/20/2018 2:22:10 PM	A53550
Chromiu	m	ND	0.0060		mg/L	1	8/20/2018 2:22:10 PM	A53550
Copper		ND	0.0060		mg/L	1	8/20/2018 2:22:10 PM	A53550
Iron		ND	0.020		mg/L	1	8/20/2018 2:22:10 PM	A53550
Lead		ND	0.0050		mg/L	1	8/20/2018 5:31:17 PM	B53550
Magnesi	um	6.5	1.0		mg/L	1	8/20/2018 2:22:10 PM	A53550
Mangane	ese	0.0077	0.0020		mg/L	1	8/20/2018 2:22:10 PM	A53550
Potassiu	m	ND	1.0		mg/L	1	8/20/2018 2:22:10 PM	A53550
Seleniun	n	ND	0.050		mg/L	1	8/20/2018 2:22:10 PM	A53550
Silver		ND	0.0050		mg/L	1	8/20/2018 5:31:17 PM	B53550
Sodium		31	1.0		mg/L	1	8/20/2018 2:22:10 PM	A53550
Uranium		ND	0.10		mg/L	1	8/20/2018 2:22:10 PM	A53550

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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

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
  - PQL Practical Quanitative Limit
  - 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 limit. Page 33 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

### Hall Environmental Analysis Laboratory, Inc.

Cross Gradient and Downgradient Wells

**Client Sample ID: MW-12** Collection Date: 8/7/2018 12:10:00 PM

Lab ID: 1808439-009

**CLIENT:** Andeavor Bloomfield

**Project:** 

Received Date: 8/8/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: DISSOLVED METALS					Analyst	: pmf
Zinc	ND	0.020	mg/L	1	8/20/2018 2:22:10 PM	A53550
EPA 6010B: TOTAL RECOVERABLE METALS			-		Analvst	: pmf
Arsenic	ND	0 020	ma/l	1	8/13/2018 4·43·47 PM	39719
Barium	0.064	0.020	mg/L	1	8/13/2018 1:30:42 PM	39719
Cadmium	ND	0.0020	mg/L	1	8/13/2018 1:30:42 PM	39719
Chromium	0.14	0.0060	mg/L	1	8/13/2018 1:30:42 PM	39719
Lead	ND	0.0050	ma/L	1	8/13/2018 8:43:55 PM	39719
Selenium	ND	0.050	mg/L	1	8/13/2018 1:30:42 PM	39719
Silver	ND	0.0050	mg/L	1	8/13/2018 1:30:42 PM	39719
EPA METHOD 8015D: GASOLINE RANGE			-		Analyst	AG
Gasoline Range Organics (GRO)	ND	0.050	ma/l	1	8/10/2018 3:52:37 PM	A53346
Surr: BFB	105	70-130	%Rec	1	8/10/2018 3:52:37 PM	A53346
EPA METHOD 8270C' SEMIVOLATILES			,	•	Analyst	
Accomptitions		10		1	9/15/2019 12:52:26 DM	20765
		10	µg/∟ ug/l	1	9/15/2018 12:52:20 FM	20765
		10	µg/∟ ug/l	1	8/15/2018 12:52:20 FM	39765
Anthracono		10	µg/∟	1	8/15/2018 12:52:20 FM	20765
		10	µg/∟ ug/l	1	9/15/2018 12:52:20 FM	20765
Renz(a)anthracene		10	µg/∟ ug/l	1	8/15/2018 12:52:20 FM	39765
Benzo(a)nyrene		10	μg/L μg/l	1	8/15/2018 12:52:20 PM	30765
Benzo(b)fluoranthene	ND	10	μg/L μg/l	1	8/15/2018 12:52:26 PM	39765
Benzo(a, h.i)pervlene	ND	10	μg/L μg/l	1	8/15/2018 12:52:26 PM	39765
Benzo(k)fluoranthene	ND	10	µg/=	1	8/15/2018 12:52:26 PM	39765
Benzoic acid	ND	20	µg/=	1	8/15/2018 12:52:26 PM	39765
Benzyl alcohol	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765
Bis(2-chloroethoxy)methane	ND	10	µa/L	1	8/15/2018 12:52:26 PM	39765
Bis(2-chloroethyl)ether	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765
Bis(2-chloroisopropyl)ether	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765
Bis(2-ethylhexyl)phthalate	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765
4-Bromophenyl phenyl ether	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765
Butyl benzyl phthalate	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765
Carbazole	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765
4-Chloro-3-methylphenol	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765
4-Chloroaniline	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765
2-Chloronaphthalene	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765
2-Chlorophenol	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765
4-Chlorophenyl phenyl ether	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765
Chrysene	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765

Matrix: AQUEOUS

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

**Oualifiers:** \* Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 34 of 56 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit

Sample container temperature is out of limit as specified W

Date Reported: 8/31/2018

**Client Sample ID: MW-12** 

<b>Project:</b> Cross Gradient and I	Downgradient Wells	ent Wells Collection Date: 8/7/2018 12:10:00 PM								
Lab ID: 1808439-009	Matrix: AQUEO	US	<b>Received Da</b>	te: 8/3	8/2018 7:00:00 AM					
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch				
EPA METHOD 8270C: SEMIV	OLATILES				Analyst	JDC				
Di-n-butyl phthalate	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
Di-n-octyl phthalate	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Dibenz(a,h)anthracene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Dibenzofuran	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
1,2-Dichlorobenzene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
1,3-Dichlorobenzene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
1,4-Dichlorobenzene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
3,3´-Dichlorobenzidine	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Diethyl phthalate	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Dimethyl phthalate	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
2,4-Dichlorophenol	ND	20	μg/L	1	8/15/2018 12:52:26 PM	39765				
2,4-Dimethylphenol	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
4,6-Dinitro-2-methylphenol	ND	20	μg/L	1	8/15/2018 12:52:26 PM	39765				
2,4-Dinitrophenol	ND	20	μg/L	1	8/15/2018 12:52:26 PM	39765				
2,4-Dinitrotoluene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
2,6-Dinitrotoluene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Fluoranthene	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
Fluorene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Hexachlorobenzene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Hexachlorobutadiene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Hexachlorocyclopentadiene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Hexachloroethane	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Indeno(1,2,3-cd)pyrene	ND	10	μg/L	1	8/15/2018 12:52:26 PM	39765				
Isophorone	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
1-Methylnaphthalene	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
2-Methylnaphthalene	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
2-Methylphenol	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
3+4-Methylphenol	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
N-Nitrosodi-n-propylamine	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
N-Nitrosodimethylamine	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
N-Nitrosodiphenylamine	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
Naphthalene	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
2-Nitroaniline	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
3-Nitroaniline	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
4-Nitroaniline	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
Nitrobenzene	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
2-Nitrophenol	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
4-Nitrophenol	ND	10	µg/L	1	8/15/2018 12:52:26 PM	39765				
Pentachlorophenol	ND	20	µg/L	1	8/15/2018 12:52:26 PM	39765				

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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

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
- PQL Practical Quanitative Limit
- 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 limit Page 35 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

Client Sample ID: MW-12

Project: Lab ID:	Cross Gradient and Downgradien 1808439-009	Collection Date: 8/7/2018 12:10:00 PM           Matrix: AQUEOUS         Received Date: 8/8/2018 7:00:00 AM								
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch		
EPA MET	HOD 8270C: SEMIVOLATILES						Analyst:	JDC		
Phenant	hrene	ND	10		µg/L	1	8/15/2018 12:52:26 PM	39765		
Phenol		ND	10		μg/L	1	8/15/2018 12:52:26 PM	39765		
Pyrene		ND	10		µg/L	1	8/15/2018 12:52:26 PM	39765		
Pyridine		ND	10		µg/L	1	8/15/2018 12:52:26 PM	39765		
1,2,4-Tri	chlorobenzene	ND	10		µg/L	1	8/15/2018 12:52:26 PM	39765		
2,4,5-Tri	chlorophenol	ND	10		µg/L	1	8/15/2018 12:52:26 PM	39765		
2,4,6-Tri	chlorophenol	ND	10		µg/L	1	8/15/2018 12:52:26 PM	39765		
Surr: 2	2-Fluorophenol	48.5	15-74.1		%Rec	1	8/15/2018 12:52:26 PM	39765		
Surr: F	<sup>D</sup> henol-d5	44.7	15-59.8		%Rec	1	8/15/2018 12:52:26 PM	39765		
Surr: 2	2,4,6-Tribromophenol	64.4	22.1-112		%Rec	1	8/15/2018 12:52:26 PM	39765		
Surr: N	Nitrobenzene-d5	69.2	33.2-94		%Rec	1	8/15/2018 12:52:26 PM	39765		
Surr: 2	2-Fluorobiphenyl	68.8	34-90.9		%Rec	1	8/15/2018 12:52:26 PM	39765		
Surr: 4	1-Terphenyl-d14	73.3	15-149		%Rec	1	8/15/2018 12:52:26 PM	39765		
EPA MET	HOD 8260B: VOLATILES						Analyst:	RAA		
Benzene		ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Toluene		ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Ethylben	zene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Methyl te	ert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
1,2,4-Tri	methylbenzene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
1,3,5-Tri	methylbenzene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
1,2-Dichl	loroethane (EDC)	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391		
1,2-Dibro	omoethane (EDB)	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391		
Naphtha	lene	ND	2.0		μg/L	1	8/13/2018 9:09:00 PM	R53391		
1-Methyl	naphthalene	ND	4.0		μg/L	1	8/13/2018 9:09:00 PM	R53391		
2-Methyl	naphthalene	ND	4.0		μg/L	1	8/13/2018 9:09:00 PM	R53391		
Acetone		ND	10		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Bromobe	enzene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Bromodi	chloromethane	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Bromofo	rm	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Bromom	ethane	ND	3.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
2-Butanc	one	ND	10		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Carbon o	disulfide	ND	10		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Carbon 7	Tetrachloride	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Chlorobe	enzene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Chloroet	hane	ND	2.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Chlorofo	rm	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
Chlorom	ethane	ND	3.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
2-Chloro	toluene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		
4-Chloro	toluene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391		

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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

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
- PQL Practical Quanitative Limit
- 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 Page 36 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 8/31/2018

Client Sample ID: MW-12

Project: Lab ID:	Cross Gradient and Downgrad 1808439-009	dient Wells         Collection Date: 8/7/2018 12:10:00 PM           Matrix: AQUEOUS         Received Date: 8/8/2018 7:00:00 AM						
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8260B: VOLATILES						Analyst	RAA
cis-1.2-D	CE	ND	1.0		ua/L	1	8/13/2018 9:09:00 PM	R53391
cis-1,3-D	lichloropropene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
1,2-Dibro	omo-3-chloropropane	ND	2.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
Dibromo	chloromethane	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
Dibromo	methane	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
1,2-Dichl	orobenzene	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
1,3-Dichl	orobenzene	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
1,4-Dichl	orobenzene	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
Dichloro	difluoromethane	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
1,1-Dichl	oroethane	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
1,1-Dichl	oroethene	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
1,2-Dichl	oropropane	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
1,3-Dichl	oropropane	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
2,2-Dichl	oropropane	ND	2.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
1,1-Dichl	oropropene	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
Hexachlo	probutadiene	ND	1.0		μg/L	1	8/13/2018 9:09:00 PM	R53391
2-Hexan	one	ND	10		µg/L	1	8/13/2018 9:09:00 PM	R53391
Isopropy	lbenzene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
4-Isoprop	byltoluene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
4-Methyl	-2-pentanone	ND	10		µg/L	1	8/13/2018 9:09:00 PM	R53391
Methylen	e Chloride	ND	3.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
n-Butylbe	enzene	ND	3.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
n-Propyll	penzene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
sec-Buty	lbenzene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
Styrene		ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
tert-Buty	benzene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
1,1,1,2-T	etrachloroethane	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
1,1,2,2-T	etrachloroethane	ND	2.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
Tetrachlo	proethene (PCE)	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
trans-1,2	-DCE	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
trans-1,3	-Dichloropropene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
1,2,3-Trio	chlorobenzene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
1,2,4-Trio	chlorobenzene	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
1,1,1-Trio	chloroethane	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
1,1,2-Trie	chloroethane	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
Trichloro	ethene (TCE)	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
Trichloro	fluoromethane	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
1,2,3-Trio	chloropropane	ND	2.0		µg/L	1	8/13/2018 9:09:00 PM	R53391
Vinyl chlo	oride	ND	1.0		µg/L	1	8/13/2018 9:09:00 PM	R53391

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

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

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
- PQL Practical Quanitative Limit
- 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 limit Page 37 of 56
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory,	Inc. Date Rep
CLIENT: Andeavor Bloomfield	Client Sample ID: MW-12

orted: 8/31/2018 Collection Date: 8/7/2018 12:10:00 PM

Project:	Cross Gradient and Downgrad	ient Wells	(	Collection Date: 8/7/2018 12:10:00 PM					
Lab ID:	1808439-009	Matrix: AQUE	OUS	<b>Received Dat</b>	<b>e:</b> 8/	8/2018 7:00:00 AM			
Analyses		Result	PQL	Qual Units	DF	<b>Date Analyzed</b>	Batch		
EPA MET	HOD 8260B: VOLATILES					Analyst	RAA		
Xylenes,	Total	ND	1.5	µg/L	1	8/13/2018 9:09:00 PM	R53391		
Surr: 1	1,2-Dichloroethane-d4	103	70-130	%Rec	1	8/13/2018 9:09:00 PM	R53391		
Surr: 4	1-Bromofluorobenzene	102	70-130	%Rec	1	8/13/2018 9:09:00 PM	R53391		
Surr: [	Dibromofluoromethane	111	70-130	%Rec	1	8/13/2018 9:09:00 PM	R53391		
Surr: 7	Foluene-d8	93.4	70-130	%Rec	1	8/13/2018 9:09:00 PM	R53391		

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

- \* Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 38 of 56 J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

WO#:	1	80	8439

Client: Project:	Andeavo Cross Gr	r Bloomfie adient and	eld Downg	radient We	lls						
Sample ID	MB	SampT	ype: <b>mk</b>	olk	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	PBW	Batch	n ID: <b>R5</b>	3415	R	anNo: 5	3415				
Prep Date:		Analysis D	ate: 8/	13/2018	S	SeqNo: 1	759231	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, Orl	thophosphate (As P	ND	0.50								
Sulfate		ND	0.50								
Nitrate+Nitrite as	s N	ND	0.20								
Sample ID	LCS	SampT	ype: Ics	5	Tes	tCode: El	PA Method	300.0: Anions	;		
Client ID:	LCSW	Batch	n ID: <b>R5</b>	3415	R	anNo: 5	3415				
Prep Date:		Analysis D	ate: 8/	13/2018	S	SeqNo: 1	759232	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		0.46	0.10	0.5000	0	92.7	90	110			
Chloride		4.6	0.50	5.000	0	91.6	90	110			
Bromide		2.4	0.10	2.500	0	94.3	90	110			
Phosphorus, Ort	thophosphate (As P	4.5	0.50	5.000	0	90.9	90	110			
Sulfate		9.0	0.50	10.00	0	90.4	90	110			
Nitrate+Nitrite as	s N	3.3	0.20	3.500	0	95.1	90	110			
Sample ID	LCS	SampT	ype: Ics	6	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	LCSW	Batch	n ID: <b>R5</b>	3580	R	anNo: 5	3580				
Prep Date:		Analysis D	ate: 8/	20/2018	S	SeqNo: 1	766477	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		4.6	0.50	5.000	0	92.9	90	110			
Sulfate		9.2	0.50	10.00	0	92.3	90	110			
Sample ID	MB	SampT	ype: mt	olk	Tes	tCode: El	PA Method	300.0: Anions	;		
Client ID:	PBW	Batch	n ID: R5	3580	R	anNo: 5	3580				
Prep Date:		Analysis D	ate: 8/	20/2018	S	SeqNo: 1	766478	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	0.50								
Sulfate		ND	0.50								

#### **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
- PQL Practical Quanitative Limit
- 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

Page 39 of 56

WO#:	180	8439

Client: Project:	Andeavor Cross Gra	Bloomfiel	ld Downg	radient We	lls						
Sample ID	1808439-001BMS	SampTy	ype: <b>MS</b>	6	Tes	tCode: El	PA Method	8015D: Diese	I Range		
Client ID:	MW-32	Batch	ID: 39	725	F	RunNo: 5	3384				
Prep Date:	8/10/2018	Analysis Da	ate: <b>8/</b>	13/2018	S	SeaNo: 1	759049	Units: ma/L			
		D //	DOI			NDEO					o
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLIMIt	Quai
	Organics (DRO)	2.5	0.40	2.500	0	102	89.6	145			
Sull: DNOP		0.24		0.2500		97.1	70.0	135			
Sample ID	1808439-001BMS	SampTy	ype: <b>MS</b>	SD	Tes	tCode: El	PA Method	8015D: Diese	I Range		
Client ID:	MW-32	Batch	ID: 39	725	F	RunNo: 5	3384				
Prep Date:	8/10/2018	Analysis Da	ate: <b>8/</b>	13/2018	S	SeqNo: 1	759050	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	2.0	0.40	2.500	0	80.5	89.6	145	23.3	20	SR
Surr: DNOP		0.20		0.2500		81.4	76.6	135	0	0	
Sample ID	LCS-39725	SampTy	ype: LC	S	Tes	tCode: El	PA Method	8015D: Diese	I Range		
Client ID:	LCSW	Batch	ID: 39	725	F	RunNo: 5	3384				
Prep Date:	8/10/2018	Analysis Da	ate: <b>8/</b>	13/2018	S	SeqNo: 1	759066	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	2.1	0.40	2.500	0	83.4	76.5	158			
Surr: DNOP		0.20		0.2500		81.4	76.6	135			
Sample ID	MB-39725	SampTy	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Diese	I Range		
Client ID:	PBW	Batch	ID: 39	725	F	RunNo: 5	3384				
Prep Date:	8/10/2018	Analysis Da	ate: <b>8/</b>	13/2018	S	SeqNo: 1	759067	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	ND	0.40								
Motor Oil Rang	ge Organics (MRO)	ND	2.5								
Surr: DNOP		0.57		0.5000		114	76.6	135			

#### **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
- PQL Practical Quanitative Limit
- 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

Page 40 of 56

Andeavor Bloomfield

Project: Cross C	Gradient and D	owng	radient We	11s						
Sample ID 100ng lcs	SampTyp	be: LC	s	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: LCSW	Batch I	D: <b>R5</b>	3391	R	unNo: 5	3391				
Prep Date:	Analysis Dat	te: <b>8/</b>	13/2018	S	SeqNo: 1	759339	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Toluene	20	1.0	20.00	0	99.6	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	111	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.3		10.00		92.8	70	130			
Sample ID rb	SampTyp	De: ME	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch I	D: R5	3391	R	RunNo: 5	3391				
Prep Date:	Analysis Dat	te: <b>8/</b>	13/2018	S	SeqNo: 1	759340	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:**

**Client:** 

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 41 of 56

WO#:	1808439
	31-Aug-18

Client: A Project: C	Andeavor Bloomfie Cross Gradient and	eld Downg	radient We	lls						
Sample ID rh	Samo			Tes	tCode: El	PA Method	8260B: VOI	ΔΤΙΙ ΕS		
	Bata	, in <b>D</b>	2204	103		2204	02008. VOL	AIILLO		
	Baic			Г	CUNINO: 3					
Prep Date:	Analysis L	Date: 8/	13/2018		SeqNo: 1	759340	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-chloropropa	ne 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								
1 1 Dichlorodilluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1, 1-Dichloroethene	ND	1.0								
1,2-Dichloropropane		1.0								
2.2 Dichloropropane		2.0								
1 1 Dichloropropene		2.0								
Hevachlorobutadiene		1.0								
		1.0								
Isonronylhenzene	ND	10								
4-Isopropylisenzene	ND	1.0								
4-Methyl-2-pentanone	ND	1.0								
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								

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 42 of 56

Client:AndeaveProject:Cross G	or Bloomfie radient and	eld Downg	radient We	lls						
Sample ID <b>rb</b>	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batc	h ID: <b>R5</b>	3391	R	RunNo: 5	3391				
Prep Date:	Analysis [	Date: 8/	13/2018	S	SeqNo: 1	759340	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	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.4		10.00		93.7	70	130			
Sample ID 1808439-001ams	s Samp <sup>-</sup>	Гуре: М	6	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: MW-32	Batc	h ID: R5	3391	R	RunNo: 5	3391				
Prep Date:	Analysis [	Date: <b>8/</b>	13/2018	S	SeqNo: 1	759346	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	60.5	137			
Toluene	19	1.0	20.00	0	97.1	70	130			
Chlorobenzene	20	1.0	20.00	0	98.7	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	114	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.3		10.00		93.2	70	130			
Sample ID 1808439-001ams	d Samp	Гуре: М	SD	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: MW-32	Batc	h ID: R5	3391	R	RunNo: 5	3391				
Prep Date:	ample IDrbSampType:MBLKlient ID:PBWBatch ID:R53391rep Date:Analysis Date:8/13/2nalyteResultPQLSPyl chlorideND1.0enes, TotalND1.5Surr: 1,2-Dichloroethane-d410Surr: 2biromofluorobenzene10Surr: Toluene-d89.4ample ID1808439-001amsSampType:MW-32Batch ID:R53391rep Date:Analysis Date:8/13/2nalyteResultPQLpatene221.0uene191.0lorobenzene201.0-Dichloroethane-d410Surr: 1,2-Dichloroethane-d410Surr: 1,2-Dichloroethane-d411Surr: 1,2-Dichloroethane-d411Surr: 1,2-Dichloroethane-d411Surr: 1,2-Dichloroethane-d411Surr: 1,2-Dichloroethane-d411Surr: 1,2-Dichloroethane-d411Surr: 1,					759347	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	60.5	137	2.29	20	
Toluene	19	1.0	20.00	0	93.1	70	130	4.19	20	
Chlorobenzene	19	1.0	20.00	0	95.8	70	130	3.01	20	
1,1-Dichloroethene	22	1.0	20.00	0	112	70	130	1.16	20	
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130	2.23	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		108	70	130	0	0	
Surr: Toluene-d8	9.3		10.00		92.9	70	130	0	0	

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 43 of 56

Client: Andea Project: Cross	ovor Bloomfie Gradient and	ld Downg	radient We	11s						
Sample ID <b>mb-39765</b>	SamoT			Tos	tCode: E	PA Method	8270C: Semi	volatilos		
	Datak	ype. wi	765	165			6270C. Seini	volatiles		
	Balcr	11D. 39	600	Г	unino: <b>3</b>					
Prep Date: 8/14/2018	Analysis D	ate: 8/	14/2018	5	SeqNo: 1	/5998/	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)fluorantnene	ND	10								
Benzoic acid	ND	20								
Benzyl alconol		10								
Bis(2-chloroethul)othor		10								
Dis(2-chloroisopropyl)othor		10								
Bis(2-ethylbeyyl)nhthalate	ND	10								
	ND	10								
Rutyl henzyl nhthalate	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	ND	10								
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 <sup>-</sup> 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								

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 44 of 56

Client:	Andeavor Bloor	nfield											
Project:	Cross Gradient a	and Downg	gradient We	lls									
Sample ID mb-3970	55 Sa	mpType: <b>M</b>	BLK	TestCode: EPA Method 8270C: Semivolatiles									
Client ID: PBW	В	atch ID: 39	765	F	RunNo: 5	3436							
Prep Date: 8/14/20	Analys	sis Date: 8	/14/2018	S	SeqNo: 1	759987	Units: µg/L						
Analyte	Resu	lt PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
2,4-Dinitrotoluene	N	D 10											
2,6-Dinitrotoluene	N	D 10											
Fluoranthene	N	D 10											
Fluorene	N	D 10											
Hexachlorobenzene	N	D 10											
Hexachlorobutadiene	N	D 10											
Hexachlorocyclopentadier	ne N	D 10											
Hexachloroethane	N	D 10											
Indeno(1,2,3-cd)pyrene	N	D 10											
Isophorone	N	D 10											
1-Methylnaphthalene	N	D 10											
2-Methylnaphthalene	N	D 10											
2-Methylphenol	N	D 10											
3+4-Methylphenol	N	D 10											
N-Nitrosodi-n-propylamine	e N	D 10											
N-Nitrosodimethylamine	N	D 10											
N-Nitrosodiphenylamine	N	D 10											
Naphthalene	N	D 10											
2-Nitroaniline	N	D 10											
3-Nitroaniline	N	D 10											
4-Nitroaniline	N	D 10											
Nitrobenzene	N	D 10											
2-Nitrophenol	N	D 10											
4-Nitrophenol	N	D 10											
Pentachlorophenol	N	D 20											
Phenanthrene	N	D 10											
Phenol	N	D 10											
Pyrene	N	D 10											
Pyridine	N	D 10											
1,2,4-Trichlorobenzene	N	D 10											
2,4,5-Trichlorophenol	N	D 10											
2,4,6-Trichlorophenol	N	D 10											
Surr: 2-Fluorophenol	9	5	200.0		47.3	15	74.1						
Surr: Phenol-d5	7	5	200.0		37.4	15	59.8						
Surr: 2,4,6-Tribromophe	enol 12	0	200.0		59.6	22.1	112						
Surr: Nitrobenzene-d5	6	6	100.0		65.9	33.2	94						
Surr: 2-Fluorobiphenyl	6	2	100.0		61.8	34	90.9						
Surr: 4-Terphenyl-d14	7	3	100.0		73.0	15	149						

- Value exceeds Maximum Contaminant Level. \*
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH Not In Range Р
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 45 of 56

#### **Client:**

Andeavor Bloomfield **Project:** Cross Gradient and Downgradient Wells

Sample ID 1808439-004Fms	SampT	Гуре: МS	3	Tes	tCode: El	PA Method	8270C: Semi	volatiles		
Client ID: MW-38	Batch	h ID: 39	765	F	RunNo: 5	3467				
Prep Date: 8/14/2018	Analysis D	Date: <b>8/</b>	15/2018	S	SeqNo: 1	761608	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.6	15	123			
4-Chloro-3-methylphenol	160	10	200.0	0	78.6	26.6	118			
2-Chlorophenol	140	10	200.0	0	72.4	15	120			
1,4-Dichlorobenzene	72	10	100.0	0	71.8	19	108			
2,4-Dinitrotoluene	63	10	100.0	0	63.3	27.8	103			
N-Nitrosodi-n-propylamine	92	10	100.0	0	92.2	32.3	126			
4-Nitrophenol	91	10	200.0	0	45.3	15	72.1			
Pentachlorophenol	140	20	200.0	0	70.0	15	114			
Phenol	86	10	200.0	0	42.8	15	67.5			
Pyrene	77	10	100.0	0	77.4	31.2	112			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	22.1	123			
Surr: 2-Fluorophenol	110		200.0		54.1	15	74.1			
Surr: Phenol-d5	91		200.0		45.4	15	59.8			
Surr: 2,4,6-Tribromophenol	140		200.0		71.2	22.1	112			
Surr: Nitrobenzene-d5	77		100.0		77.2	33.2	94			
Surr: 2-Fluorobiphenyl	74		100.0		74.1	34	90.9			
Surr: 4-Terphenyl-d14	82		100.0		81.7	15	149			
Sample ID 1808439-004Fms	d SampT	Гуре: М	SD	Tes	tCode: El	PA Method	8270C: Semi	volatiles		
Client ID: MW-38	Batch	h ID: 39	765	F	RunNo: 5	3467				
Prep Date: 8/14/2018	Analysis D	Date: <b>8/</b>	15/2018	S	SeqNo: 1	761609	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	67	10	100.0	0	67.5	15	123	11.3	30.5	
4-Chloro-3-methylphenol	150	10	200.0	0	75.6	26.6	118	4.01	50	
2-Chlorophenol	130	10	200.0	0	63.2	15	120	13.6	36.3	
1,4-Dichlorobenzene	61	10	100.0	0	61.3	19	108	15.8	42.1	
2,4-Dinitrotoluene	60	10	100.0	0	59.6	27.8	103	6.05	28.5	
N-Nitrosodi-n-propylamine	80	10	100.0	0	79.8	32.3	126	14.4	25.4	
4-Nitrophenol	78	10	200.0	0	39.0	15	72.1	14.9	50	
Pentachlorophenol	130	20	200.0	0	64.3	15	114	8.46	50	
Phenol	80	10	200.0	0	39.9	15	67.5	7.03	46.1	
Pyrene	70	10	100.0	0	70.3	31.2	112	9.67	34.3	
1,2,4-Trichlorobenzene	71	10	100.0	0	70.8	22.1	123	13.1	43.6	
Surr: 2-Fluorophenol	94		200.0		46.8	15	74.1	0	0	
Surr: Phenol-d5	82		200.0		41.0	15	59.8	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		66.7	22.1	112	0	0	
Surr: Nitrobenzene-d5	68		100.0		67.8	33.2	94	0	0	
Surr: 2-Fluorobiphenyl	66		100.0		66.1	34	90.9	0	0	

#### **Qualifiers:**

- Value exceeds Maximum Contaminant Level. \*
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit PQL
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
  - Sample pH Not In Range
- RL Reporting Detection Limit

Р

W Sample container temperature is out of limit as specified

Page 46 of 56

WO#:	1808439
	31-Aug-18

Client: Project:	Andeavo Cross Gr	r Bloomfie adient and	eld Downg	radient We	lls						
Sample ID 1	1808439-004Fms	d SampT	уре: <b>М</b>	SD	Tes	tCode: El	PA Method	8270C: Semiv	volatiles		
Client ID:	MW-38	Batch	n ID: <b>39</b>	765	F	RunNo: 5	3467				
Prep Date:	8/14/2018	Analysis D	)ate: <b>8/</b>	15/2018	ç	SeaNo: 1	761609	Units: ua/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphe	enyl-d14	76		100.0		76.4	15	149	0	0	
Sample ID	cs-39765	SampT	ype: LC	S	Tes	tCode: El	PA Method	8270C: Semi	volatiles		
Client ID: L	LCSW	Batch	n ID: 39	765	F	RunNo: 5	3467				
Prep Date:	8/14/2018	Analysis D	0ate: <b>8/</b>	15/2018	S	SeqNo: 1	761612	Units: µg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene		63	10	100.0	0	62.6	55.1	104			
4-Chloro-3-meth	ylphenol	140	10	200.0	0	71.7	57	115			
2-Chlorophenol		130	10	200.0	0	62.5	43.4	112			
1,4-Dichlorobenz	zene	54	10	100.0	0	54.3	38	95.2			
2,4-Dinitrotoluen	e	56	10	100.0	0	56.5	55.1	96.7			
N-Nitrosodi-n-pro	opylamine	78	10	100.0	0	78.2	55	112			
4-Nitrophenol		83	10	200.0	0	41.4	16.6	93			
Pentachloropher	าดไ	120	20	200.0	0	60.4	43.2	104			
Phenol		73	10	200.0	0	36.6	21.3	85.7			
Pyrene		66	10	100.0	0	65.8	64.9	105			
1,2,4-Trichlorobe	enzene	62	10	100.0	0	62.0	42.6	107			
Surr: 2-Fluoro	phenol	89		200.0		44.5	15	74.1			
Surr: Phenol-d	15	80		200.0		39.8	15	59.8			
Surr: 2,4,6-Tril	bromophenol	130		200.0		63.0	22.1	112			
Surr: Nitroben:	zene-d5	66		100.0		66.0	33.2	94			
Surr: 2-Fluorol	biphenyl	63		100.0		63.4	34	90.9			
Surr: 4-Terphe	enyl-d14	67		100.0		67.4	15	149			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 47 of 56

Client: Project:	Andea Cross	avor Bloomfield Gradient and Downg	radient We	lls						
Sample ID	MB-40027	SampType: ME	BLK	Test	Code: EF	PA Method	7470: Mercur	у		
Client ID:	PBW	Batch ID: 40	027	R	unNo: 53	8784				
Prep Date:	8/28/2018	Analysis Date: 8/	29/2018	S	eqNo: 17	75007	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND 0.00020								
Sample ID	LCS-40027	SampType: LC	S	Test	Code: EF	PA Method	7470: Mercur	у		
Client ID:	LCSW	Batch ID: 40	027	R	unNo: <b>5</b> 3	3784				
Prep Date:	8/28/2018	Analysis Date: 8/	29/2018	S	eqNo: 17	75008	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0050 0.00020	0.005000	0	99.1	80	120			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 48 of 56

	Cama	T		Tee				head Mate		
	Samp	Type: NIE		Test		PA Method	6010B: DISSO		als	
Client ID: PBW	Bato	ch ID: A5	3550	R	unNo: 5	3550				
Prep Date:	Analysis	Date: 8/	20/2018	S	eqNo: 1	765751	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								
ron	ND	0.020								
Vagnesium	ND	1.0								
Vanganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Sodium	ND	1.0								
Jranium	ND	0.10								
Zinc	ND	0.020								
Sample ID LCS-A	Samp	Type: LC	S	Test	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID: LCSW	Bato	h ID: A5	3550	R	unNo: 5	3550				
Prep Date:	Analysis	Date: 8/	20/2018	S	eqNo: 1	765753	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	0.020	0.5000	0	99.9	80	120			
Barium	0.51	0.020	0.5000	0	103	80	120			
Cadmium	0.50	0.0020	0.5000	0	99.9	80	120			
Calcium	49	1.0	50.00	0	97.1	80	120			
Chromium	0.51	0.0060	0.5000	0	102	80	120			
Copper	0.50	0.0060	0.5000	0	100	80	120			
ron	0.50	0.020	0.5000	0	101	80	120			
Vagnesium	50	1.0	50.00	0	99.4	80	120			
Vanganese	0.50	0.0020	0.5000	0	101	80	120			
Potassium	49	1.0	50.00	0	97.3	80	120			
Selenium	0.50	0.050	0.5000	0	99.8	80	120			
Sodium	50	1.0	50.00	0	99.9	80	120			
Jranium	0.46	0.10	0.5000	0	91.3	80	120			
Zinc	0.51	0.020	0.5000	0	102	80	120			
	Samp	Туре: МЕ	BLK	Test	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Sample ID MB-B	Bote	h ID: <b>B5</b>	3550	R	unNo: 5	3550				
Sample ID MB-B Client ID: PBW	Dall									
Sample ID MB-B Client ID: PBW Prep Date:	Analysis	Date: 8/	20/2018	S	eqNo: 1	766579	Units: mg/L			

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Detection Limit

Sample container temperature is out of limit as specified W

Page 49 of 56

WO#:	1808439
	31-Aug-18

Client:		Andeavor Bloomfie	eld								
Project:		Cross Gradient and	Dow	ngradient We	lls						
Sample ID	MB-B	Samp	Гуре:	MBLK	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batc	h ID:	B53550	R	unNo: <b>!</b>	53550				
Prep Date:		Analysis [	Date:	8/20/2018	S	eqNo: 1	766579	Units: mg/L			
Analyte		Result	PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		ND	0.005	50							
Silver		ND	0.005	50							
Sample ID	LCS-B	Samp	Гуре:	LCS	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Batc	h ID:	B53550	R	unNo:	53550				
Prep Date:		Analysis [	Date:	8/20/2018	S	eqNo: 1	766581	Units: mg/L			
Analyte		Result	PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		0.50	0.005	50 0.5000	0	99.6	80	120			
Silver		0.11	0.005	50 0.1000	0	107	80	120			
Sample ID	MB-A	Samp	Гуре:	MBLK	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batc	h ID:	A53717	R	unNo:	53717				
Prep Date:		Analysis [	Date:	8/27/2018	S	eqNo: 1	1772819	Units: mg/L			
Analyte		Result	PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	0.02	20							
Selenium		ND	0.05	50							
Zinc		ND	0.02	20							
Sample ID	LCS-A	Samp	Гуре:	LCS	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Batc	h ID:	A53717	R	unNo: <b>:</b>	53717				
Prep Date:		Analysis [	Date:	8/27/2018	S	eqNo: 1	1772821	Units: mg/L			
Analyte		Result	PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.47	0.02	20 0.5000	0	93.2	80	120			
Selenium		0.46	0.05	50 0.5000	0	92.6	80	120			
Zinc		0.50	0.02	20 0.5000	0	99.3	80	120			
Sample ID	MB-B	Samp	Гуре:	MBLK	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batc	h ID:	B53717	R	unNo: <b>:</b>	53717				
Prep Date:		Analysis [	Date:	8/27/2018	S	eqNo: 1	772853	Units: mg/L			
Analyte		Result	PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		ND	0.005	50				-			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 50 of 56

Client: Project:		Andeavor Bloomfi Cross Gradient and	deavor Bloomfield oss Gradient and Downgradient Wells								
Sample ID	LCS-B	Samp	Type: L	.cs	TestCode: EPA Method 6010B: Dissolved Metals						
Client ID:	LCSW	Batch ID: <b>B53717</b>			R	unNo: 5	3717				
Prep Date:		Analysis	Date:	8/27/2018	S	eqNo: 1	772855	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		0.50	0.005	0 0.5000	0	100	80	120			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 51 of 56

WO#:	1	18084	139
	21	4	10

Client: Project:	Andeavor Cross Gra	Bloomfi adient and	eld 1 Downg	radient We	lls						
Sample ID	MB-39719	Samp	Type: MI	BLK	Tes	tCode: E	PA 6010B:	Total Recove	rable Meta	als	
Client ID:	PBW	Bate	ch ID: 39	719	F	RunNo: 53393					
Prep Date:	8/10/2018	Analysis	Date: 8	13/2018	S	SeqNo: 1	758346	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		ND	0.020					-			
Cadmium		ND	0.0020								
Chromium		ND	0.0060								
Lead		0.012	0.0050								
Selenium		ND	0.050								
Silver		ND	0.0050								
Sample ID	LCS-39719	Samp	Type: LC	s	Tes	tCode: E	PA 6010B:	Total Recove	able Meta	als	
Client ID:	LCSW	Bate	ch ID: 39	719	F	RunNo: 5	3393				
Prep Date:	8/10/2018	Analysis	Date: 8	13/2018	S	SeqNo: 1	758348	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.50	0.020	0.5000	0	100	80	120			
Cadmium		0.51	0.0020	0.5000	0	101	80	120			
Chromium		0.48	0.0060	0.5000	0	96.1	80	120			
Lead		0.49	0.0050	0.5000	0	97.9	80	120			В
Selenium		0.49	0.050	0.5000	0	98.4	80	120			
Silver		0.10	0.0050	0.1000	0	101	80	120			
Sample ID	1808439-001DMS	Samp	Туре: М	6	Tes	tCode: E	PA 6010B:	Total Recove	able Meta	als	
Client ID:	MW-32	Bate	ch ID: 39	719	F	RunNo: 5	3393				
Prep Date:	8/10/2018	Analysis	Date: 8	13/2018	S	SeqNo: 1	758373	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.51	0.020	0.5000	0	101	75	125			
Cadmium		0.50	0.0020	0.5000	0	101	75	125			
Chromium		0.47	0.0060	0.5000	0	94.2	75	125			
Selenium		0.49	0.050	0.5000	0	97.3	75	125			
Silver		0.12	0.0050	0.1000	0	117	75	125			
Sample ID	1808439-001DMSI	<b>)</b> Samp	Type: M	SD	Tes	tCode: E	PA 6010B:	Total Recove	rable Meta	als	
Client ID:	MW-32	Bate	ch ID: 39	719	F	RunNo: <b>5</b>	3393				
Prep Date:	8/10/2018	Analysis	Date: 8	13/2018	S	SeqNo: 1	758374	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.50	0.020	0.5000	0	101	75	125	0	20	
Cadmium		0.50	0.0020	0.5000	0	100	75	125	0	20	
Chromium		0.47	0.0060	0.5000	0	93.8	75	125	0	20	
Selenium		0.49	0.050	0.5000	0	97.9	75	125	0	20	
Silver		0.12	0.0050	0.1000	0	118	75	125	0	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
- PQL Practical Quanitative Limit
- 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

Page 52 of 56

WO#:	1808439
	31-Aug-18

Client:	Andeavoi	Bloomfi	eld								
Project:	Cross Gra	adient and	l Down	gradient We	lls						
Sample ID	MB-39719	Samp	Туре: М	BLK	Tes	tCode: El	PA 6010B: "	Total Recover	able Meta	als	
Client ID:	PBW	Batc	h ID: 3	9719	F	RunNo: <b>53393</b>					
Prep Date:	8/10/2018	Analysis I	Date: 8	/13/2018	5	SeqNo: 1	758434	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	0.020								
Sample ID	LCS-39719	Samp	Type: L	cs	Tes	tCode: El	PA 6010B: "	Total Recover	able Meta	als	
Client ID:	LCSW	Batc	h ID: 3	9719	F	RunNo: 5	3393				
Prep Date:	8/10/2018	Analysis I	Date: 8	/13/2018	5	SeqNo: 1	758436	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.48	0.020	0.5000	0	95.1	80	120			
Sample ID	1808439-001DMS	Samp	Туре: <b>М</b>	S	Tes	tCode: El	PA 6010B: "	Total Recover	able Meta	als	
Client ID:	MW-32	Batc	h ID: 3	9719	F	RunNo: <b>5</b> :	3393				
Prep Date:	8/10/2018	Analysis I	Date: 8	/13/2018	5	SeqNo: 1	758472	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.49	0.020	0.5000	0	98.5	75	125			
Sample ID	1808439-001DMSI	<b>)</b> Samp	Туре: М	SD	Tes	tCode: El	PA 6010B: "	Total Recover	able Meta	als	
Client ID:	MW-32	Batc	h ID: 3	9719	F	RunNo: 5	3393				
Prep Date:	8/10/2018	Analysis I	Date: 8	/13/2018	5	SeqNo: 1	758473	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.49	0.020	0.5000	0	97.2	75	125	1.38	20	
Sample ID	MB-39719	Samp	Туре: М	BLK	Tes	tCode: El	PA 6010B: "	Total Recover	able Meta	als	
Client ID:	PBW	Batc	h ID: 3	9719	F	RunNo: 5	3387				
Prep Date:	8/10/2018	Analysis I	Date: 8	/13/2018	5	SeqNo: 1	759161	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		ND	0.0050								
Sample ID	LCS-39719	Samp	Type: L	cs	Tes	tCode: El	PA 6010B: "	Total Recover	able Meta	als	
Client ID:	LCSW	Batc	h ID: 3	9719	F	RunNo: <b>5</b> :	3387				
Prep Date:	8/10/2018	Analysis I	Date: 8	/13/2018	S	SeqNo: 1	759163	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		0.51	0.0050	0.5000	0	101	80	120			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 53 of 56

Qual

Client:	Andeavor	Andeavor Bloomfield								
Project:	Cross Gra	Cross Gradient and Downgradient Wells								
Sample ID	1808439-001DMS	SampTy	be: MS	s	Test	Code: E	EPA 6010B:	Total Recover	able Meta	lls
Client ID:	MW-32	Batch I	D: 39	719	R	unNo: <b>t</b>	53387			
Prep Date:	8/10/2018	Analysis Dat	te: <b>8</b> /	/13/2018	S	eqNo: 1	1759179	Units: mg/L		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit

Lead	0.47	0.0050	0.5000	0	94.8	75	125			
Sample ID 1808439-001DMSD	Samp	Туре: М	SD	Tes	tCode: El	PA 6010B:	Total Recove	rable Meta	als	
Client ID: MW-32	Bato	:h ID: 39	719	F	RunNo: 5	3387				
Prep Date: 8/10/2018 A	Analysis I	Date: 8/	13/2018	S	SeqNo: 1	759182	Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.48	0.0050	0.5000	0	95.6	75	125	0.811	20	

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 54 of 56

Client:AndeavProject:Cross C	Andeavor Bloomfield Cross Gradient and Downgradient Wells									
Sample ID 2.5ug gro lcs	Samp	s	TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: A53346			F	RunNo: 5					
Prep Date:	Analysis Date: 8/10/2018			S	SeqNo: 1	757458	Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qua
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	103	70	130			
Surr: BFB	9.8		10.00		98.0	70	130			
Sample ID rb	SampType: MBLK			Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
				-						

Client ID: PBW	Batch	ID: <b>A5</b>	3346	R	unNo: 5	3346				
Prep Date:	Analysis D	ate: <b>8/</b>	10/2018	S	eqNo: 1	757460	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	10		10.00		104	70	130			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 55 of 56

WO#:	1808439
	31-Aug-18

Client: Project:	Andeavor Cross Gra	Bloomfie	ld Down	gradient We	lls						
Sample ID	mb-1 alk	SampT	уре: М	BLK	Tes	tCode: SI	M2320B: AI	kalinity			
Client ID:	PBW	Batch	ID: R	53469	R	RunNo: 5	3469				
Prep Date:		Analysis D	ate: 8	/15/2018	S	SeqNo: 1	761677	Units: <b>mg/L</b>	. CaCO3		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3)	ND	20.00								
Sample ID	lcs-1 alk	SampT	ype: L	CS	Tes	tCode: SI	M2320B: AI	kalinity			
Client ID:	LCSW	Batch	ID: R	53469	R	unNo: 5	3469				
Prep Date:		Analysis D	ate: 8	/15/2018	S	SeqNo: 1	761678	Units: mg/L	. CaCO3		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3)	79.68	20.00	80.00	0	99.6	90	110			
Sample ID	mb-2 alk	SampT	vpe: M	BI K	Tes	tCode: <b>SI</b>	M2320B· AI	kalinity			
Client ID:	PBW	Batch	ID: R	53469	R	tunNo: 5	3469	laining			
Prep Date:		Analysis D	ate: 8	/15/2018	S	SeqNo: 1	761702	Units: mg/L	. CaCO3		
Analyte		Result	POL	SPK value	SPK Ref Val	%RFC	l owl imit	- Highl imit	%RPD	RPDI imit	Qual
Total Alkalinity	(as CaCO3)	ND	20.00			/01120	LOWLINK	- ingri Linin			Quui
Sample ID	lcs-2 alk	SampT	vpe l	ns.	Tes	tCode: SI	M2320B· AI	kalinity			
Client ID:	LCSW	Batch	ID: R	53469	R	unNo: 5	3469	Kalling			
Prep Date:		Analysis D	ate: 8	/15/2018	S	SeaNo: 1	761704	Units: mg/L	. CaCO3		
Analyte		Result	POI	SPK value	SPK Rof Val	%REC	Low/ imit	Highl imit	%PPD	<b>RPDI</b> imit	Qual
Total Alkalinity	(as CaCO3)	80.20	20.00	80.00	0	100	90	110	70111 D		Quai
Sample ID	1808/30-001cmc	SamoT	who: M	e	Tos	tCodo: SI	12220B. VI	kalinity			
	1808439-00 TCIIIS	Batch	уре. <b>М</b>	53469	res R	unNo: 5	12320B. AI	кашту			
Prep Date:		Analysis D	ate: 8	/15/2018	, S	SeaNo: 1	761709	Units: ma/l	CaCO3		
		Popult		SDK voluo	SDK Dof Vol	2/ DEC	Lowlimit				Qual
Total Alkalinity	(as CaCO3)	216.6	20.00	80.00	180.7	44.9	19.8	126	/01\FU	AF DLIIIII	Qual
Comple ID	4000420.004.000.00	CompT	VDO: M	<u></u>	Taa	Codor C	10000D. AL				
	1000439-001CMS0	Batch	ype. W	3U 53/60			VIZJZUB: AI 3/60	канніту			
Pren Date	11144-92	Analysis D	ate: 9	/15/2018		SeaNo: 1	761711	Units mall	CaCO3		
				001/							Qual
Analyte	(as CaCO3)	Result	20.00	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD 0 148	RPDLimit 20	Qual
i oldi Aikaiiiilly	(as CacOs)	217.0	20.00	60.00	100.7	40.3	19.0	120	0.140	20	

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 56 of 56

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental . Albu TEL: 505-345-3975 Website: www.hau	Analy 490 querq FAX: llenvii	sis Laborato 11 Hawkins I 10e, NM 871 505-345-410 ronmental.co	ory NE 09 07 om	San	nple Log-In Check List
Client Name: ANDEAVOR BLOOMFIEL	Work Order Number:	180	3439			RcptNo: 1
Received By: Anne Thorne	8/8/2018 7:00:00 AM			Ann	J.	<b>~</b>
Completed By: Anne Thome SAB 08/09	8/8/2018 10:55:01 AM			Anni	A	~
Labeled by ENM 8918						
Chain of Custody						
1. Is Chain of Custody complete?		Yes	$\checkmark$	No		Not Present
2. How was the sample delivered?		<u>Clier</u>	<u>nt</u>			
Log In 3. Was an attempt made to cool the samples?		Yes		No		NA 🗌
4. Were all samples received at a temperature of	of >0° C to 6.0°C	Yes		No		
5. Sample(s) in proper container(s)?		Yes	$\checkmark$	No		
6. Sufficient sample volume for indicated test(s)	?	Yes	$\checkmark$	No		
7. Are samples (except VOA and ONG) properly	rpreserved?	Yes		No		
8. Was preservative added to bottles?		Yes		No	$\checkmark$	NA 🗌
9. VOA vials have zero headspace?		Yes	$\checkmark$	No		No VOA Vials
10. Were any sample containers received broker	1?	Yes		No		# of preserved
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes		No		for pH: 24 So or >12 unless noted)
12. Are matrices correctly identified on Chain of C	Custody?	Yes		No		Adjusted? NO
13. Is it clear what analyses were requested?		Yes		No		
<ol> <li>Were all holding times able to be met? (If no, notify customer for authorization.)</li> </ol>		Yes		No		Checked by: EUM SA/IS
<u>Special Handling (if applicable)</u>						
15. Was client notified of all discrepancies with the	nis order?	Yes		No		NA 🗹
Person Notified:	Date					
By Whom:	Via:	] eMa	ail 🗌 Pho	one 🗌	Fax	In Person
Regarding:						
Client Instructions:	~			~1		
16. Additional remarks:	per TP- N	пи	1-38	e o	930	+ the 8270 is correct
17 Cooler Information	DUTILES, PER IP 1 RI	EPOF	x i /at 8/8/18	D		Ar 08/apr
Cooler No Temp °C Condition Se	al Intact   Seal No   Si	al D	ate S	ligned E	3y -	.
1 1.8 Good Yes					•	
2 1.1 Good Yes						

)	FNTAI	ATORY		00			<sup>2</sup> 0	0.28	s s	noi (ali (N)		人) - ··( - ··(	Gen. Chem Gen. Chem Air Bubbles					×	x x					
	Σ	, NO	F	A 871	4107								ime2) 0728									 		-
I	Č	B	al.cor	رم NN	345-4	lest						(A	0V) 80928	×								 -		
	a L		nent	erque	505-	Requ	s,	BDG	4 Z8	08	/ S	əbia	oitee9 1808											
	2		viron	nbnq	Fax	ysis	(⊅	'OS''	₽O₄	<sup>7</sup> 01	۷ <sup>،</sup> ٤С	DNʻI	Э,∃) enoinA											
	Ш	ž	allen	۲ ۱	10	Anal			le.	to1	S	eta Ibte	RCRA 8 M		 	×							 	_
		Ş	ww.h	S NE	-397!				SMI	S02	208 	20	PAH (8310											-
	Ī	Ā	Ň	wkin:	5-345					(1.)	811	- pc	TPH (Metho				[					 		
		ר ר		)1 Ha	1. 505		(0	ЯM	/0Y	a/o	אכ	e) (	15108 HqT	×	×									-
				49(	-Te		۸)	ίμο	see	)H	ЧТ	+∃8	BTEX+MTE											
г					<del></del>			(12	08)	s'8I	NT	+∃{	BTEX+MTE											_
			radient Wells	Ð	ţ		-lains			/ne	No	-CE-1-0= (.2	СЕ-1:0= 1.12060 НЕАL No. 1808439	02	02	102	02	R R	102		)			
	Time:	I 🗆 Rush	e: Cross-Gi	8-7-	nnual Even	3266	ager: Allen F			Tracy Pay	JY Yes	peratured 3.	- ∠ • t Preservative Type	HCI	Neat	HNO3	HNO3	H <sub>2</sub> SO <sub>4</sub>	Neat	-				
	Turn-Around	X Standard	Project Nam	Date:	Project #: AI	PO# 1262	Project Mana			Sampler:	On Ice:	Sample Tem	Container Type and #	40ml VOA-5	250 ml amber-1	250 ml plastic-1	125 ml plastic-1	125 ml plastic-1	500 ml plastic-1					
• • •	stody Record	oomfield Terminal		4990	ield, NM 87413	1-1483	Hains@Andeavor.com		X Level 4 (Full Validation)				Sample Request ID	MW-32										
	of-Cu	vor - Bl		50 CR	Bloomf	915-534	Allen.S.				EXCEL		Matrix	H <sub>2</sub> O		_								
•	hain	Andea		Address:		#:	r Fax#:	Package:	Idard	<u>ا</u>	(Type)_		Time	ONS ONS										
	ပ	Client:		Mailing		Phone #	email oi	QA/QC F	🗆 Stan	□ Othe	X EDD		Date	8.1.18										

<del>1</del> ק ע

1									<b>UN -</b>	~ ^/	אוֹי פייאאופי	Ή_		<b> </b>	<b> </b>	<u>_</u>	<u> </u>	<u> </u>	<u> </u>	<u>   </u>	vi	]
Ø	Ż						វារជ	Kal	IA -	·wa	นา เยาอนอย			<u> </u>		K				┞─┼	alyte	
ъ'						z	00%	uo	iu¥-	าเมอ	General Ch		6				┦ᠿ	·			- An	
		5		<u>801</u> v					sj	ejəl	h bevlossiQ						$\uparrow$			┝──┢		
11		2		V 07	2				(A	'0Λ·	imə2) 0728					<u> </u>	1					
				Ξų v	uest					()	8260B (VO	X		<u> </u>		†					and	
	¥ .,			erqu 505	Red		PCB's	280	) 8 /	səp	s081 Pestic					1					spo	
	25			npuu Lax	/sis		(*OS'*(	)Ч, <sub>5</sub>	ON'	εON	ID, <b>A) anoinA</b>										Veth	
i	Ū Š			ξ.	Analy			ie)	оΤ	elst	9M 8 A937			$\left  \times \right $	•						and a second sec	
			NE N	14E			(S	WIS	520	S 10	0128) HA9										ŢŹţi	
			ww kine				a	(	1.40	) <u>ç</u> p	EDB (Metho	[									Ana	
		•	Нам	505 .				(	1.81	. <del>4</del> p	 TPH (Metho			ļ		<u> </u>	ļ					
			001			(( ()		)ЯC	1/02	19)	86108 H9T	$ \times$			ļ							
				r•		yu ()	Z00) 9		ат 4 	86.20	TM + X318											
		<u>г</u>				()	.008/ \$	1	чт <del>т</del>	. 39	THEX + MT										<u> </u>	
												9	3	2	ß	23	N N				. 7 . 8	
												139	\	6	9	7	7					
										10.1		84										
			Q			ains						280										
	ush		1	ent		ΪĽ		444			e e e e e e e e e e e e e e e e e e e	/										
	<b>2</b>		5	Ш <u></u>		Alle				au	ervati Vpe	5	E E	ģ	n n	, j	۲ ۲					
Time			8	nua	266	der: /	<b>`</b>				Pres	H	ž	Ĩ	N H	Ĩ	Ľ					
pun	lard	lame		A	623	lana(	•			dula	# e	Ŝ	. 71	5.	<u>ا</u> ب	5 2	J					
-Aro	Stand	sct N	5	sct #	<b># 12</b>	sct N			pici.	16	ntain e anc	Š	N N	STR	ST ST	エリ	STIK					
Tur	×	Proj	Date	Proj	Ğ	Proje	•	and Second			<sup>1</sup> <sup>1</sup> <sup>2</sup> <sup>0</sup> <sup>0</sup>	л Ч	2 N 2 N 2 N	25	2 4 7	2 2	P Sc				Receiv	
						ε	5	-	Black		0	N						•				
rd	nal					<u>S</u>			1		ist II	#						:			3	
S	rmi			113		avo		5			due	ANK									17	
Re	l Te			874		nde					Re	BL									0	
ς γ	ield			MN	3	0	4	5			nple	A									113	
tot	omf		066	ůd,	148	ains					San	H										
sn	В В		84	nfie	34-	S.H	×	ł	1													
- C	ż		000	00	15-5	len.			XCE		latriy	50					$\rightarrow$				Talis A	
P	avc		ss:	Ē	စ်	A	й.		Ш		2											ノ
air	nde		ddree			ax#	ckage		ype)		Lime	<u>80</u>					>				1 i S i J	
<u>ร</u>	₹ ti		ng A		e #	l or F	C Pa anda	je.			n	<u>्र</u>							$\dashv$			
	Clien		Vailir		hoh Noh	mai	SA/Q	č r			Date	34					->					
1	- 1		, I	•	-1	-	<u> </u>	-		1	i		1	1	I	I	1	l	1	I		

i		(	•					Г							•)		L L	a	
<sub>ี</sub> บิ	Jain	ק-נ <u>ר</u>	Jstody F	Record	Turn-Around	Time:				I 		Ц			Z		Ę		
Client:	Andea	Ivor - B	loomfield	Terminal	X Standard	D Rush				. <		ן אין	្តរ		Ö	2	<u></u>	;	
					Project Name	Cross-G	radient Wells				h.www	allenvi	ronme	ental.c	E		)	   	
Mailing  ∕	Address	50 CF	र 4990		Date:	8-1-	0		4901	Hawki	ns NE	dIA -	nquer	que. N	IM 87	109			
		Bloom	ifield, NM 8	87413	Project #: An	nual Even	t	<u> </u>	Tel.	505-34	15-397	ц.	ax 5(	)5-34(	5410	2			
Phone #		915-53	4-1483		PO# 12623	266						Analy	sis Re	sanba	ť				
email or	Fax#:	Allen.S	.Hains@An	ideavor.com	Project Mana	ger: Allen F	lains		رب ۸)	10	-		(Þ				۰ C	7 -	
QA/QC P	ackage:							(120	iuo s		(3		05.40	<u>a</u> 24			0.8v		
Stance	lard		X Level 4 (I	Full Validation)		1		8)s	89	)	(	let	29.	70			sr tini		
□ Other					Sampler.	<u>Tracy Pay</u>	/ne	18.	)Ha	(L.8	(1.4	loT		<u></u>	(	S	ilor		(N
	(Type).	EXCEL			On Ice:	X Yes		<u>الل</u>	11+	117	20 20	sji	1 <sup>°E</sup> O	( 59	∀O,	lete	1A ∙ IIA ·		, or
					Sample Temp	erature: اللغر	1-	35	35	po v c	po	etə	N'K	(∀)	<b>∧-</b> !	•M	- "U - "U		() \$
Date	Time	Matrix	Sample	Request ID	Container Type and #	Preservative Type	2 caders HEAL NO. 18 () 84 39	BTEX+MTI	BTEX+MTE	TPH (Meth	EDB (Wefth		D, 7) znoinA	8260B (VO	mə2) 0728	bevlossiQ	nenJ .neb Gen. Chen		Air Bubble
8/1/8	284G	H <sub>2</sub> O	M	W-27	40ml VOA-5	HCI	202							×					
					250 ml amber-1	Neat	Ş												
					250 ml plastic-1		ac d					×							
					125 ml plastic-1		ip.									×			
					125 ml plastic-1	H₂SO₄	12 12 12										×		
	┝╼╸				500 ml plastic-1	Neat	692										××		
														_					
																	_		
																		┝─┼-	
														_		_	_		
Bate: B//B	rime: 1540	Relinquish			Received by:	15	String 1540	Ren	larks:	See	Analy	tical N	<b>lethc</b>	ds a	L pu	arge	t Ana	alyte	0.
Date:	Time:		red by: 2 L L L C L	عال	Repélived by:	- all	R and Time												

	(	•				_					I	-	Ч	0	T
Chain	-of-CL	ustody Record	Turn-Around	Time:					2			Ľ			
Client: Ande	avor - B	loomfield Terminal	X Standard	🗆 Rush					XS				Ĕ		. >
	2		Project Name	e: Downgra	tdient Wells			www.h	allenvir	onment	al.com		, 1 1		
Mailing Addres	s: 50 CF	र 4990	Date:	8-1-	18	490	Hawk	ins NE	- Albu	duerque	, NM	87109	_		
	Bloom	nfield, NM 87413	Project #: A	nual Even	t l	Te	. 505-3	45-397	Ë S	. 505-	345-4	107			
Phone #:	915-53	34-1483	PO# 1262;	3266					Analys	is Requ	lest				
email or Fax#:	Allen.S	i.Hains@Andeavor.co	n Project Mana	Ider: Allen H	lains	(/	(0		` 	S, (†				<sup>2</sup> C	
QA/QC Package	U.					(12)	NMR	(5						))28/	
□ Standard		X Level 4 (Full Validatio	(-			08); 285	<u></u>		16	32 F		-	S	, Ajin	
□ Other			Sampler:	<b>Tracy Pay</b>	ne	B's	(L') ( <b>L</b> )	(L.I	10T	<sup>.7</sup> 08		5	uoi	iile:	(N
X EDD (Type)	EXCEL	R	On Ice:	¥r Yes	D No	MT· 9T·	אן 188	228 204	s	/ Si		slet Slet	μĄ	 ∀IR	JO
			Sample Tem	perature 3	-45-10= 11	+∃8 +∃8	<sup>7</sup> po ס) נ	; po	lete	әріс I'ИC	(A 1	ЭW	' - 'I	· - 'I	<u>(</u> ا
					20012->	atw atw	ISE ISE	ore	9 M 8	را-,ت estic		pə	uəy	uəy	səld
Date Time	Matrix	Sample Request II	Container Type and #	Preservative Type	HEAL No.	EX+I EX+I	<mark>08 Н</mark> М) Н	M) 8 1	3 AA:	B1 Pe	) 809	vios	ID .n	i) .n	lduð
			;		180 8439	18 118	I <b>9T</b>	ED	ЗЯ	10A 308	228 928	sid	9Đ	i9Đ	ηiΑ
8/1/18/0936	H <sub>2</sub> O	MW-38	40ml VOA-5	HCI	Poo-		X				X				
			250 ml amber-1	Neat	102		X								
			1 liter 🛠	Neat	top				 		×				
			250 ml	HNO3	7.6				×		-				
			125 ml	ONH							┢				-
			plastic-1		102-							<		-	_
			125 ml plastic-1	H <sub>2</sub> SO4	402								×		
<b>→</b>		+	500 ml plastic-1	Neat	472								×	×	
8/1/18 -	H20	TRIP BLANK	40 ML	HCI	-212						X				
-			VOA-S												
			Æ												
			No BU												
Pate: Time: ¶7/1€  SUU	Relinquish	I I I I I I I I I I I I I I I I I I I	Received by:		Date Time $8/1/_{\rm K}$ 1546	Remarks	See	Analyt	ical M	ethods	s and	Targ	et A	halyt	es.
Date: Time: 8/71, c 1751		ied by:	Received by:	L.	Bate Time										

(		(	•					-						·	S	Ч Ч	$\omega$	ļ
ט	<u>Jain-</u>	- - - - - - - - - - - - - - - - - - -	<u>ustody F</u>	Record	Turn-Around	Time:				1		Z				Ż	Ē	
Client:	Andea	Ivor - B	loomfield	Terminal	X Standard	🗆 Rush					Į	s S	l v	<b>A</b> B	R C R		20	.≻
					Project Name	: Downgra	dient Wells			8	ww.ha	llenviro	nmen	tal.co	E		, , )	I.
Mailing A	Address	50 CF	र 4990		Date:	8-7-	ß	4	901 H	awkin	s NE	- Albuc	hergi	Je, NN	M 871	60		
		Bloom	field, NM 8	37413	Project #: An	inual Even			-el. 5(	5-345	-3975	Га	x 505	-345-	4107			
Phone #		915-53	4-1483		PO# 12623	:266					1	nalysi	s Req	luest				
email or	Fax#:	Allen.S	.Hains@An	deavor.com	Project Mana	ger: Allen H	łains	(/	(0			(	S. 				۲ C	
QA/QC P	ackage:							(12) (12)	NNR		(§	05					າວສ	
□ Stand	lard		X Level 4 (F	-ull Validation)				08); 285	NO7		SMI	16	32 6		•	S	, tir	
□ Other					Sampler:	<b>Tracy Pay</b>	ne	s'a D)H	ID/O	(1.	S0.	ijo]	-1 <sup>2</sup> 08	- · ·		uo	ille	(N
X EDD (	Type)_	EXCEL			On Ice:	kaf Yes	DNo.	NT VT	אכ	811	825		/ S		(AC	u v v	ЯІА	oL
					Sample Temp	berature 2.12	1-1.0= 1.1	3E+	ອ) ເ	7 pc		lbte Nu	ebi:	(∀	) -^C	/ - '	' - 'I	Y)
Date	Time	Matrix	Sample	Request ID	Container Type and #	Preservative Type	Zcoluss HEAL No. RAR 8439	atm+xəta atm+xəta	98108 H9T	HGT (Meth	0168) HA9		ot Pestic	OV) 80928	ime2) 0728	Gen. Chem 	mədϽ .nອຍ	Air Bubbles
ghha	1010	H <sub>2</sub> O	W	W-37	40ml VOA-5	HCI	2006		×		ļ			×				/
					250 ml amber-1	Neat	1)02,		×									
					250 ml plastic-1	HNO <sub>3</sub>	902					×						
					125 ml plastic-1	HNO <sub>3</sub>	rale										8	
					125 ml plastic-1	H <sub>2</sub> SO <sub>4</sub>	902									×		
					500 ml plastic-1	Neat	192				 					×	×	
-										+	+		+			_		+
										+		+	$\downarrow$		+	+		+
B/7/E	ime: [SYU	Relinquish	ed by:		Received by:		Date Time 8/7/45 1.540	Remarl	ŝ	ee Al	nalyti	cal Me	ethod	s and	d Tai	get /	Inaly	tes.
Date: 1 8 1, ( )	ime: 751		ed by:	Celer	Received by	how here	Date Time											
		<b>s</b> , -	>> ,	*	1.10	<u>}</u>	>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>											]

6 or 8		IS LABORATORY	ironmental.com	uquerque, NM 87109	<sup>-</sup> ax 505-345-4107	sis Request	( <sup>†</sup>	יוּנָּאַ פּרַכָּ ז סליצס׳	0 <sub>2,1</sub> 808 808 800 800 800 800 800 800 800 80	Ani 8 / 3 9 / 1 9 / 1 9 / 1 9 / 1	ا, NCC (۲ ا, ۱ ۷ (۲ (۲ (۲	Anions (F,C 8081 Pestid 8260B (VO 8270 (Semi Bissolved Gen. Chem Gen. Chem	×			×	×	XX			Aethods and Target Analytes.		
			www.hallen	4901 Hawkins NE - All	Tel. 505-345-3975	Anal	(o	(Ino ssi <b>NS)</b> (SM	02I 150 (L' () () () () () () () () () () () () ()	191 504 504 504 504	5121 512 512 512 512 512 512 512 512 512	ВТЕХ+МТЕ FPH (Metho FPH (Metho FPH (8310 (8310 FPH (8310 FPH (8310) FPH (8310 FPH (8310 FPH (8310) FPH (8310 FPH (8310) FPH (8310 FPH (8310) FPH (8310) FPH (8310 FPH (8310) FPH (8310	×	×	×				· ·		narks: See Analytical I	·	
			adient Wells	18	nt		Hains	(1208)	yne B's	□ No	$\frac{8-ce-1-2-1}{1-ce-1} = 1$	■ HEAL No.    / <i>KO</i> 8439	102-	102	202	Lop	Lap	172			Date Time Re	1/18 18/10	Date Time
	Turn-Around Time:	X Standard 🛛 🗆 Rus	Project Name: Downgr	Date: 8-7-	Project #: Annual Eve	PO# 12623266	Project Manager: Allen		Sampler: Tracy Pa	On Ice: 🗶 Yes	Sample Temperature 5.	Container Preservative Type and # Type	40ml VOA-5 HCI	250 ml Neat amber-1	250 ml HNO <sub>3</sub>	125 ml HNO <sub>3</sub> plastic-1	125 ml H <sub>2</sub> SO <sub>4</sub>	500 ml Neat			Received by:	/ ime was	Received by:
	stody Record	omfield Terminal		0661	eld, NM 87413	-1483	ains@Andeavor.com	C Level 4 (Full Validation)				Sample Request ID	MW-35								by:		py:
	ain-of-Cus	ndeavor - Blo		Idress: 50 CR 4	Bloomfi	915-534	ax#: Allen.S.H	ckage: X		ype) EXCEL		Time Matrix	0,H Sho					<b></b>			ne: Relinquished	<u> 1 × 1 つき</u>	ne: Relinquished
	СР С	Client: A		Mailing Ac		Phone #:	email or F.	QA/QC Pac	□ Other	X EDD (T		Date 1	8/1/18/16								Date: Tin		Date: Tin

0	م د ۲						<u> </u>			עני פוואאופי / זיא								lytes.	
~~  L	Ë	)				، م	vtinile	oin. Ы∆		General Che	·				$\sim$	X		 Ana	
0	Ĩ.	5	60	)										$\overline{\mathbf{v}}$		×	 	 get	
7	Σc	ې ۲	1871	107						-im92) 0728				^				 Tai	
I				345-	est				(	AOV) 80928	X	-			_			 and	
	Ľ.	l ștrec			sequ	s,g	5 PCE	808	/ səp	8081 Pesticio			<u> </u>					 spo	
	Ž		naue	× ×	sis F	(*(	CS'⁺Oc	0 <sup>5,</sup> F	N' <sup>s</sup> ON	I,ID, A) anoinA	·							letř	
	μŅ		al Alb		naly		ր	bjol	sle	BARA 8 Met			$\left  \right\rangle$					alN	
			л Ц	975	V		(SM	IS0	728 1	o 0168) HA9							-	lytio	
	<b>Y</b>		kins l	45-3				(۲.	709 F	EDB (Methoo								Ana	
			Haw	05-3				(Ľ.	8141	TPH (Method		-						ee	
			901 1	<u>ם</u> כו		(0)	1M\OS	AQ\	08C	88108 H9T	$\geq$	$\times$							
			4	F		viuo () ~	seĐ)	НЧТ	+ =	BTEX + MTE								 mark	
- -		_		<del>1</del>		(12)	08) e'8	TME	. + 38 I I I	BTEX + MTE								 Re	r
									1.0	N. S.	-Cn 8	208	802.	-ces	802	203-		Time 1540	Time
			Q	L L		lains		ne	□ No c//.o.	arcow Alt Alt Alt Alt Alt Alt Alt Alt Alt Alt								Shhrs	) Date
	lime: □ Rush		8-7-	nual Even	266	ger: Allen H		Tracy Pay	ervtes antria⊂'8	Preservative Type	HC1	NEAT	HND3	HN03	Hz SOH	NEAT			
	I urn-Around X Standard	Project Name	Date:	Project #: An	PO# 12623	Project Manaç		Sampler.	On Ice Sample Temp	Container Type and #	1 YOA-5	ZSOML Anber-1	250 ML	PLASTIC	125 ML PLASTIC-1	SOONL PLASTIC-1		Received by:	Received by:
tody Doord	omfield Terminal		0661	eld, NM 87413	1483	ains@Andeavor.com	C Level 4 (Full Validation)			Sample Request ID	QUIPMENT BLANKE		PLASTIC	(		4		مرب ر	
of Circ	avor - Blo		s: 50 CR 4	Bloomfi	915-534-	Allen.S.H	×		EXCEL	Matrix	H <sub>2</sub> O E					4		Relinquished	Relinquished
hain	Ande		Addres		#i	vr Fax#:	Package: idard	er	) (Type).	Time	105	/				*		Time: کالکا	Time: リスト
C	Client:		Mailing		Phone	<u>email c</u>	QA/QC	□ Oth	X EDC	Date	9/1/8	/				$\rightarrow$		B/1/B	Date:

ĺ	•	(	   					r							ע	o ما	т.	n
ပ	hain	-of-CL	ustody F	Secord	Turn-Around	Time:				I		Ű			2		E	-
Client:	Andea	Ivor - B	sloomfield	Terminal	X Standard	□ Rush							SI					, ≻
					Project Name	Downgra	adient Wells			3	Ma	llenvir		ntal.co			)	
Mailing	Address	: 50 CF	R 4990		Date:	<u>8</u> -7-	<u>8</u>	4	901 F	lawkin	s NE	- Albu	iquerc	N.	IM 87.	109		
		Bloom	nfield, NM 8	37413	Project #: An	inual Even	lt		Tel. 5(	5-345	-3975	Ц,	ax 50	5-345	4107			
Phone <b>#</b>		915-53	34-1483		PO# 12623	:266						Analys	is Re	duest				:
email or	·Fax#:	Allen.S	S.Hains@An	deavor.com	Project Mana	ger: Allen H	lains	()	(C		_		S   (1				<sup>2</sup> C	
QA/QC F	<sup>b</sup> ackage: dard		<b>X</b>   evel 4 (F	-ull Validation)				(1208	O/WB		(SV		04'20'				ty&CC	
					Sampler:	Tracy Pav	ne	;;;;)⊦ ;)s,8	יםאַ	()		otal	9,208			540	eno alini	
X EDD	(Type)_	EXCEL			On Ice:	ly Yes	□ No	MT	оя	81	228	T a	N <sup>'E</sup>		(∀(	sle	×IK	
					Sample Temp	$\frac{1}{2}$ perature $\frac{2}{3}$	ce-1.05 /1	3E+. 3E+.	อ) เ	4 bc	2 DC 2 TO	elete	on'i	(∀	<u>۲</u>	teM 1 - /	/ - '	~ \/
Date	Time	Matrix	Sample	Request ID	Container Type and #	Preservative Type	Z ccold - 5 HEAL No.	TEX+MTE	92108 Hd	Hatta Method	0158) HA	о 8 ма В Ма	O,∃) anoin  Dita∋G_180	OV) 8092	mə2) 072	bevlossi	en. Chem	
\$\$/B	0121	H <sub>2</sub> O	M	W-12	40ml VOA-5	HCI	1012-154	8	×	- - -	d 	Ы	A 8	8 ×	8		อ	v
2					250 ml amber-1	Neat	692		×									
					1 liter amber-1	Neat	602								×			
					250 ml plastic-1	HNO3	672					×	<u></u>				<u> </u>	
					125 ml plastic-1	HNO3	672-		_							×		
					125 ml plastic-1	H₂SO₄	-200									×		
					500 ml plastic-1	Neat	602									×	×	
											$\left  \right $							
											_					_		
									_		_		_			+	+	
Date:	Time:	Relinquish	led by:		Received by:		Date Time	Remar	ks:	ee A	Jalyti	cal M	etho	ds ar	Id Ta	Inget	Anal	lytes.
<u>ي</u>	240						mai Mill											
Date:   8   1	Time:		led by:		Received by:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	( Date Imer 18/08/19				·							

# TABLE 2 Analytical Methods and Target Analytes

### Facility-Wide Groundwater Monitoring Plan - June 2017

Western Refining Southwest, Inc. - Bloomfield Refinery

VOCs (EPA Method 8260B) <sup>(1)</sup>	Total Re	coverable Metals (E	PA Method 6010B/7470)	
- Target List	- Target I	List (not applicable to	River Terrace Sampling Events)	
Benzene		Arsenic	Lead	
Toluene		Barium	Mercury	
Ethylbenzene		Cadmium	Selenium	
Xylenes		Chromium	Silver	
Methyl tert butyl ether (MTBE)	- Target I	List (for River Terrace	e Sampling Events Only)	
SVOCs - (EPA Method 8270)		Lead		
- Method List		Mercurv (DW-1 Ol	VLY)	
TPH-GRO (EPA Method 8015B)			,	
- Gasoline Range Organics	Dissolve	d Metals (EPA Meth	od 6010B / 7470)	
TPH-DRO (EPA Method 8015B)	- Target I	List (for Refinery Cor	nplex, Outfalls, and River)	
- Diesel Range Organics		Arsenic	. Manganese	
- Motor Oil Range Organics		Barium	Mercury	
Total Carbon Dioxide (Laboratory Calculated)	7	Cadmium	Potassium	
- Dissolved CO2		Calcium	Selenium	
Specific Conductivity (EPA Method 120.1 or field measurement)		Chromium	Silver	
- Specific conductance		Copper	Sodium	
TDS (EPA Method 160.1 or field measurement)	7	Iron	Uranium	
- Total dissolved solids		Lead	Zinc	
General Chemistry - Anions (EPA Method 300.0)	7	Magnesium		
Fluoride		-		
Chloride		• •		
Bromide	TPH = to	tal petroleum hydroca	urbons	
Nitrogen, Nitrite (as N)	GRO = g	asoline range organics	3	
Nitrogen, Nitrate (as N)	VOCs =	volatile organic comp	ounds	
Phosphorous, Orthophosphate (As P)	DRO = d	iesel range organics		
Sulfate	TDS = to	tal dissolved solids		
General Chemistry - Alkalinity (EPA Method 310.1)				
Alkalinity. Total				
Carbonate				
Bicarbonate				

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 Piezomenter 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: <u>www.hallenvironmental.com</u>

September 05, 2018

Allen Hains Andeavor Bloomfield 111 CR 4990 Bloomfield, NM 87413 TEL: (915) 534-1483 FAX

### RE: 8-8-18 RCRA WELLS and REFINERY WELLS

OrderNo.: 1808540

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 10 sample(s) on 8/9/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0901

Sincerely,

and

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

**Analytical Report** 

### Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield			Client	t Sampl	e <b>ID:</b> M	W-64		
Project: 8-8-18 RCRA WELLS and RE	FINERY		Coll	ection I	<b>Date:</b> 8/8	8/2018	8:20:00 AM	
Lab ID: 1808540-001	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/9	9/2018	6:50:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed I	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm	
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/13/2018 5:21:40 PM	39725
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/13/2018 5:21:40 PM	39725
Surr: DNOP	110	0	76.6-135		%Rec	1	8/13/2018 5:21:40 PM	39725
EPA METHOD 300.0: ANIONS							Analyst: MRA	L
Fluoride	ND	0.59	2.0		mg/L	20	8/9/2018 7:54:56 PM	R53348
Chloride	840	1.5	25		mg/L	50	8/21/2018 2:14:19 AM	R53555
Nitrogen, Nitrite (As N)	ND	0.96	2.0		mg/L	20	8/9/2018 7:54:56 PM	R53348
Bromide	2.5	0.027	0.10		mg/L	1	8/9/2018 7:42:05 PM	R53348
Nitrogen, Nitrate (As N)	52	0.13	2.0	*	mg/L	20	8/9/2018 7:54:56 PM	R53348
Phosphorus, Orthophosphate (As P)	5.7	1.9	10	J	mg/L	20	8/9/2018 7:54:56 PM	R53348
Sulfate	1500	10	25		mg/L	50	8/21/2018 2:14:19 AM	R53555
EPA METHOD 7470: MERCURY							Analyst: <b>rde</b>	
Mercury	0.00012	0.000038	0.00020	J	mg/L	1	8/31/2018 10:19:01 AM	40077
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.000085	0.000038	0.00020	Filtered	J mg/L	1	8/31/2018 10:25:41 AM	40077
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: pmf	
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 5:36:33 PM	B53717
Barium	0.011	0.00049	0.020	J	mg/L	1	8/22/2018 5:14:32 PM	B53642
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:14:32 PM	B53642
Calcium	450	0.15	5.0		mg/L	5	8/22/2018 5:46:59 PM	B53642
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:14:32 PM	B53642
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:14:32 PM	B53642
Iron	0.057	0.010	0.020		mg/L	1	8/22/2018 5:14:32 PM	B53642
Lead	ND	0.0050	0.0050		mg/L	1	8/22/2018 5:14:32 PM	B53642
Magnesium	66	0.011	1.0		mg/L	1	8/22/2018 5:14:32 PM	B53642
Manganese	0.0015	0.00015	0.0020	J	mg/L	1	8/22/2018 5:14:32 PM	B53642
Potassium	4.5	0.075	1.0		mg/L	1	8/22/2018 5:14:32 PM	B53642
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 5:36:33 PM	B53717
Silver	0.012	0.0010	0.0050		mg/L	1	8/22/2018 5:14:32 PM	B53642
Sodium	800	2.6	10		mg/L	10	8/22/2018 5:48:49 PM	B53642
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 5:36:33 PM	B53717
Zinc	ND	0.020	0.020		mg/L	1	8/22/2018 5:14:32 PM	B53642
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: <b>pmf</b>	
Arsenic	ND	0.011	0.020		mg/L	1	8/13/2018 4:45:15 PM	39719
Barium	0.29	0.020	0.020		mg/L	1	8/13/2018 1:32:16 PM	39719
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 1:32:16 PM	39719
Chromium	0.0097	0.0011	0.0060		mg/L	1	8/13/2018 1:32:16 PM	39719
Refer to the OC Summary report	and sample l	ogin checklis	st for flag	red OC	data and	prese	rvation information	

eŀ ł )g igg ia p

**Qualifiers:** \* Value exceeds Maximum Contaminant Level.

> D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix В Analyte detected in the associated Method Blank

Е Value above quantitation range

- J Analyte detected below quantitation limits Page 1 of 58
- Р Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified
Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and RE Lab ID: 1808540-001	FINERY Matrix:	AQUEOUS	Client Colle Rec	Sample ID: M ection Date: 8/3 ceived Date: 8/9	W-64 8/2018 9/2018	8:20:00 AM 6:50:00 AM	
Analyses	Result	MDL	PQL	Qual Units	DF	Date Analyzed H	Batch ID
EPA 6010B: TOTAL RECOVERABLE MET	TALS					Analyst: pmf	
Lead	ND	0.0050	0.0050	mg/L	1	8/13/2018 8:45:21 PM	39719
Selenium	ND	0.024	0.050	mg/L	1	8/13/2018 1:32:16 PM	39719
Silver	0.0081	0.0018	0.0050	mg/L	1	8/13/2018 1:32:16 PM	39719
EPA METHOD 8260B: VOLATILES						Analyst: RAA	
Benzene	ND	0.17	1.0	µg/L	1	8/13/2018 10:45:00 PM	I R53391
Toluene	ND	0.17	1.0	μg/L	1	8/13/2018 10:45:00 PM	I R53391
Ethylbenzene	ND	0.22	1.0	µg/L	1	8/13/2018 10:45:00 PM	l R53391
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0	μg/L	1	8/13/2018 10:45:00 PM	l R53391
1,2,4-Trimethylbenzene	ND	0.25	1.0	µg/L	1	8/13/2018 10:45:00 PM	R53391
1,3,5-Trimethylbenzene	ND	0.23	1.0	µg/L	1	8/13/2018 10:45:00 PM	R53391
1,2-Dichloroethane (EDC)	ND	0.40	1.0	µg/L	1	8/13/2018 10:45:00 PN	R53391
1,2-Dibromoethane (EDB)	ND	0.23	1.0	µg/L	1	8/13/2018 10:45:00 PN	R53391
Naphthalene	ND	0.29	2.0	µg/L	1	8/13/2018 10:45:00 PN	R53391
1-Methylnaphthalene		0.34	4.0	µg/L	1	8/13/2018 10:45:00 PN	1 R53391
		0.24	4.0	µg/∟ µg/l	1	8/13/2018 10:45:00 PM	1 P53301
Bromobenzene		0.79	10	µg/L µg/l	1	8/13/2018 10:45:00 PM	R53391
Bromodichloromethane	ND	0.28	1.0	µg/=	1	8/13/2018 10:45:00 PM	R53391
Bromoform	ND	0.32	1.0	µg/= µa/L	1	8/13/2018 10:45:00 PM	I R53391
Bromomethane	ND	0.26	3.0	μg/L	1	8/13/2018 10:45:00 PM	I R53391
2-Butanone	ND	1.3	10	μg/L	1	8/13/2018 10:45:00 PM	I R53391
Carbon disulfide	ND	0.39	10	µg/L	1	8/13/2018 10:45:00 PM	I R53391
Carbon Tetrachloride	ND	0.13	1.0	µg/L	1	8/13/2018 10:45:00 PM	I R53391
Chlorobenzene	ND	0.29	1.0	µg/L	1	8/13/2018 10:45:00 PM	l R53391
Chloroethane	ND	0.16	2.0	µg/L	1	8/13/2018 10:45:00 PM	l R53391
Chloroform	ND	0.40	1.0	µg/L	1	8/13/2018 10:45:00 PM	I R53391
Chloromethane	ND	0.29	3.0	µg/L	1	8/13/2018 10:45:00 PM	R53391
2-Chlorotoluene	ND	0.40	1.0	µg/L	1	8/13/2018 10:45:00 PM	R53391
4-Chlorotoluene	ND	0.40	1.0	µg/L	1	8/13/2018 10:45:00 PN	R53391
cis-1,2-DCE	ND	0.38	1.0	µg/L	1	8/13/2018 10:45:00 PN	R53391
cis-1,3-Dichloropropene	ND	0.30	1.0	µg/L	1	8/13/2018 10:45:00 PN	R53391
1,2-Dibromo-3-chloropropane		0.47	2.0	µg/L	1	8/13/2018 10:45:00 PN	R53391
Dibromomothano		0.24	1.0	µg/L	1	8/13/2018 10:45:00 PM	1 D52201
1 2-Dichlorobenzene		0.32	1.0	µg/∟ µg/l	1	8/13/2018 10:45:00 PM	1 R53301
1.3-Dichlorobenzene		0.31	1.0	μg/L μα/Ι	י 1	8/13/2018 10:45:00 PM	R53301
1.4-Dichlorobenzene	ND	0.40	1.0	ма/I	1	8/13/2018 10:45:00 PM	R53391
Dichlorodifluoromethane	ND	1.0	1.0	ua/L	1	8/13/2018 10:45:00 PM	I R53391
1,1-Dichloroethane	ND	0.40	1.0	µg/L	1	8/13/2018 10:45:00 PM	R53391

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 2 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield	Client Sample ID: MW-64							
Project: 8-8-18 RCRA WELLS and REFI	INERY		Colle	ection I	<b>Date:</b> 8/8	3/2018	8:20:00 AM	
Lab ID: 1808540-001	Matrix: A	Rec	eived I	<b>Date:</b> 8/9	0/2018	6:50:00 AM		
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed H	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: RAA	
1,1-Dichloroethene	ND	0.12	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
1,2-Dichloropropane	ND	0.15	1.0		μg/L	1	8/13/2018 10:45:00 PM	R53391
1,3-Dichloropropane	ND	0.27	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
2,2-Dichloropropane	ND	0.18	2.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
1,1-Dichloropropene	ND	0.16	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
Hexachlorobutadiene	ND	0.80	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
2-Hexanone	ND	0.91	10		µg/L	1	8/13/2018 10:45:00 PM	R53391
Isopropylbenzene	ND	0.22	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
4-Isopropyltoluene	ND	0.24	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
4-Methyl-2-pentanone	ND	0.45	10		µg/L	1	8/13/2018 10:45:00 PM	R53391
Methylene Chloride	ND	0.21	3.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
n-Butylbenzene	ND	0.25	3.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
n-Propylbenzene	ND	0.24	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
sec-Butylbenzene	ND	0.20	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
Styrene	ND	0.25	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
tert-Butylbenzene	ND	0.22	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
1,1,1,2-Tetrachloroethane	ND	0.25	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
1,1,2,2-Tetrachloroethane	ND	0.33	2.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
trans-1,2-DCE	ND	0.18	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
trans-1,3-Dichloropropene	ND	0.28	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
1,2,3-Trichlorobenzene	ND	0.28	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
1,2,4-Trichlorobenzene	ND	0.27	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
1,1,1-Trichloroethane	ND	0.15	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
1,1,2-Trichloroethane	ND	0.23	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
Trichloroethene (TCE)	ND	0.26	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
Trichlorofluoromethane	ND	0.17	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
1,2,3-Trichloropropane	ND	0.57	2.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
Vinyl chloride	ND	0.11	1.0		µg/L	1	8/13/2018 10:45:00 PM	R53391
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/13/2018 10:45:00 PM	R53391
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	8/13/2018 10:45:00 PM	R53391
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	8/13/2018 10:45:00 PM	R53391
Surr: Dibromofluoromethane	112	0	70-130		%Rec	1	8/13/2018 10:45:00 PM	R53391
Surr: Toluene-d8	94.4	0	70-130		%Rec	1	8/13/2018 10:45:00 PM	R53391
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	0.024	0.0097	0.050	J	mg/L	1	8/10/2018 4:15:48 PM	A53346
Surr: BFB	102	0	70-130	-	%Rec	1	8/10/2018 4:15:48 PM	A53346
CARBON DIOXIDE							Analyst: JRR	

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

**Qualifiers:** \* Value exceeds Maximum Contaminant Level. В Analyte detected in the associated Method Blank

> D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

Hall Environmental Analysis Laboratory, Inc.

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

Е Value above quantitation range

- J Analyte detected below quantitation limits Page 3 of 58
- Р Sample pH Not In Range

RL Reporting Detection Limit

Analytical Report Lab Order 1808540

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT:	Andeavor Bloomfield			Client	Sample	e <b>ID:</b> MW	V-64		
Project:	8-8-18 RCRA WELLS and RE	FINERY		Colle	ection I	<b>Date:</b> 8/8/	2018	8:20:00 AM	
Lab ID:	1808540-001	Matrix: A	AQUEOUS	Rec	eived I	<b>Date:</b> 8/9/	2018	6:50:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON	DIOXIDE							Analyst: <b>JR</b>	R
Total Cart	bon Dioxide	270	0	1.0	Н	mg CO2	/ 1	8/16/2018 2:32:05 PI	M R53511
SM2320B:	ALKALINITY							Analyst: JR	R
Bicarbona	ate (As CaCO3)	275.2	20.00	20.00		mg/L Ca	1	8/16/2018 2:32:05 PI	M R53511
Carbonate	e (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	8/16/2018 2:32:05 PI	M R53511
Total Alka	alinity (as CaCO3)	275.2	20.00	20.00		mg/L Ca	1	8/16/2018 2:32:05 PI	M R53511

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
- PQL Practical Quanitative Limit
- 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 Page 4 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

## Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield		Client Sample ID: MW-63									
<b>Project:</b> 8-8-18 RCRA WELLS and RE	FINERY		Coll	ection I	<b>Date:</b> 8/8	3/2018	9:30:00 AM				
Lab ID: 1808540-002	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/9	9/2018	6:50:00 AM				
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed E	atch ID			
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm				
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/13/2018 5:46:18 PM	39725			
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/13/2018 5:46:18 PM	39725			
Surr: DNOP	110	0	76.6-135		%Rec	1	8/13/2018 5:46:18 PM	39725			
EPA METHOD 300.0: ANIONS							Analyst: MRA				
Fluoride	ND	0.030	0.10		mg/L	1	8/9/2018 8:07:49 PM	R53348			
Chloride	92	0.59	10		mg/L	20	8/9/2018 8:20:41 PM	R53348			
Nitrogen, Nitrite (As N)	0.057	0.048	0.10	J	mg/L	1	8/9/2018 8:07:49 PM	R53348			
Bromide	1.2	0.027	0.10		mg/L	1	8/9/2018 8:07:49 PM	R53348			
Nitrogen, Nitrate (As N)	32	0.13	2.0	*	mg/L	20	8/9/2018 8:20:41 PM	R53348			
Phosphorus, Orthophosphate (As P)	5.3	1.9	10	J	mg/L	20	8/9/2018 8:20:41 PM	R53348			
Sulfate	1200	10	25		mg/L	50	8/21/2018 2:26:43 AM	R53555			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.00012	0.000038	0.00020	J	mg/L	1	8/31/2018 10:27:55 AM	40077			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000088	0.000038	0.00020	Filtered	J mg/L	1	8/31/2018 10:30:10 AM	40077			
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: pmf				
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 5:38:33 PM	B53717			
Barium	0.011	0.00049	0.020	J	mg/L	1	8/22/2018 5:16:27 PM	B53642			
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:16:27 PM	B53642			
Calcium	330	0.15	5.0		mg/L	5	8/22/2018 5:56:14 PM	B53642			
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:16:27 PM	B53642			
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:16:27 PM	B53642			
Iron	0.054	0.010	0.020		mg/L	1	8/22/2018 5:16:27 PM	B53642			
Lead	0.0059	0.0050	0.0050		mg/L	1	8/22/2018 5:16:27 PM	B53642			
Magnesium	110	0.056	5.0		mg/L	5	8/22/2018 5:56:14 PM	B53642			
Manganese	0.48	0.00015	0.0020		mg/L	1	8/22/2018 5:16:27 PM	B53642			
Potassium	3.7	0.075	1.0		mg/L	1	8/22/2018 5:16:27 PM	B53642			
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 5:38:33 PM	B53717			
Silver	0.0088	0.0010	0.0050		mg/L	1	8/22/2018 5:16:27 PM	B53642			
Sodium	380	1.3	5.0		mg/L	5	8/22/2018 5:56:14 PM	B53642			
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 5:38:33 PM	B53717			
Zinc	ND	0.020	0.020		mg/L	1	8/22/2018 5:16:27 PM	B53642			
EPA 6010B: TOTAL RECOVERABLE MET	ALS						Analyst: pmf				
Arsenic	ND	0.011	0.020		mg/L	1	8/13/2018 4:46:41 PM	39719			
Barium	0.12	0.020	0.020		mg/L	1	8/13/2018 1:33:57 PM	39719			
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 1:33:57 PM	39719			
Chromium	0.0048	0.0011	0.0060	J	mg/L	1	8/13/2018 1:33:57 PM	39719			
Refer to the OC Summary report a	nd sample 1	ogin checklis	t for flag	red OC	data and	nrece	rvation information				

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

**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

Hall Environmental Analysis Laboratory, Inc.

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits Page 5 of 58

Р Sample pH Not In Range

RL Reporting Detection Limit

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and REI Lab ID: 1808540-002	FINERY Collection Date: 8/8/2018 9:30:00 A Matrix: AQUEOUS Received Date: 8/9/2018 6:50:00 A						9:30:00 AM 6:50:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID
EPA 6010B: TOTAL RECOVERABLE MET	ALS						Analyst: pmf	
Lead	ND	0.0050	0.0050		mg/L	1	8/13/2018 1:33:57 PM	39719
Selenium	ND	0.024	0.050		mg/L	1	8/13/2018 1:33:57 PM	39719
Silver	0.0064	0.0018	0.0050		mg/L	1	8/13/2018 1:33:57 PM	39719
EPA METHOD 8260B: VOLATILES							Analyst: RAA	
Benzene	ND	0.17	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
Toluene	ND	0.17	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
Methyl tert-butyl ether (MTBE)	2.9	0.32	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
1,2,4-Trimethylbenzene	ND	0.25	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
1,3,5-Trimethylbenzene	ND	0.23	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
1,2-Dichloroethane (EDC)	0.41	0.40	1.0	J	µg/L	1	8/13/2018 11:08:00 PM	R53391
1,2-Dibromoethane (EDB)	ND	0.23	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
Naphthalene	ND	0.29	2.0		µg/∟ ua/l	1	8/13/2018 11:08:00 PM	R53391
2 Mothylnaphthalono		0.34	4.0		µg/∟ ug/l	1	8/13/2018 11:08:00 PM	R53391
	12	0.24	4.0		µg/∟ ug/l	1	8/13/2018 11:08:00 PM	R53301
Bromobenzene		0.73	10		µg/∟ ua/l	1	8/13/2018 11:08:00 PM	R53391
Bromodichloromethane	ND	0.28	1.0		µ9/= µa/l	1	8/13/2018 11:08:00 PM	R53391
Bromoform	ND	0.32	1.0		µ=9/= µa/L	1	8/13/2018 11:08:00 PM	R53391
Bromomethane	ND	0.26	3.0		μg/L	1	8/13/2018 11:08:00 PM	R53391
2-Butanone	ND	1.3	10		μg/L	1	8/13/2018 11:08:00 PM	R53391
Carbon disulfide	ND	0.39	10		µg/L	1	8/13/2018 11:08:00 PM	R53391
Carbon Tetrachloride	ND	0.13	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
Chlorobenzene	ND	0.29	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
Chloroethane	ND	0.16	2.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
Chloroform	ND	0.40	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
Chloromethane	ND	0.29	3.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
4-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
CIS-1,2-DCE	ND	0.38	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
cis-1,3-Dicnioropropene	ND	0.30	1.0		µg/∟ ua/l	1	8/13/2018 11:08:00 PM	R53391
1,2-Dibromo-3-chioropropane	ND	0.47	2.0		µg/∟ ug/l	1	8/13/2018 11:08:00 PM	R53391
Dibromomethane		0.24	1.0		µg/∟ ug/l	1	8/13/2018 11:08:00 PM	R53301
1 2-Dichlorobenzene	ND	0.31	1.0		μg/L μα/l	1	8/13/2018 11:08:00 PM	R53391
1.3-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
1,4-Dichlorobenzene	ND	0.40	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391
Dichlorodifluoromethane	ND	1.0	1.0		μg/L	1	8/13/2018 11:08:00 PM	R53391
1,1-Dichloroethane	ND	0.40	1.0		μg/L	1	8/13/2018 11:08:00 PM	R53391

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

- PQL Practical Quanitative Limit
- 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 Page 6 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield			Client Sample ID: MW-63							
<b>Project:</b> 8-8-18 RCRA WELLS and RE	FINERY	EKY <b>Collection Date:</b> 8/8/2018 9:30:00 AM								
Lab ID: 1808540-002	Matrix: A	QUEOUS	Rec	eived I	<b>Date:</b> 8/9	9/2018	6:50:00 AM			
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID		
EPA METHOD 8260B: VOLATILES							Analyst: RAA			
1,1-Dichloroethene	ND	0.12	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
1,3-Dichloropropane	ND	0.27	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
2,2-Dichloropropane	ND	0.18	2.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
1,1-Dichloropropene	ND	0.16	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
Hexachlorobutadiene	ND	0.80	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
2-Hexanone	ND	0.91	10		µg/L	1	8/13/2018 11:08:00 PM	R53391		
Isopropylbenzene	ND	0.22	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
4-Isopropyltoluene	ND	0.24	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
4-Methyl-2-pentanone	ND	0.45	10		µg/L	1	8/13/2018 11:08:00 PM	R53391		
Methylene Chloride	ND	0.21	3.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
n-Butylbenzene	ND	0.25	3.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
n-Propylbenzene	ND	0.24	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
sec-Butylbenzene	ND	0.20	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
Styrene	ND	0.25	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
tert-Butylbenzene	ND	0.22	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
1,1,1,2-Tetrachloroethane	ND	0.25	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
1,1,2,2-Tetrachloroethane	ND	0.33	2.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
trans-1,2-DCE	ND	0.18	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
trans-1,3-Dichloropropene	ND	0.28	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
1,2,3-Trichlorobenzene	ND	0.28	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
1,2,4-Trichlorobenzene	ND	0.27	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
1,1,1-Trichloroethane	ND	0.15	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
1,1,2-Trichloroethane	ND	0.23	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
Trichloroethene (TCE)	ND	0.26	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
Trichlorofluoromethane	ND	0.17	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
1,2,3-Trichloropropane	ND	0.57	2.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
Vinyl chloride	ND	0.11	1.0		µg/L	1	8/13/2018 11:08:00 PM	R53391		
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/13/2018 11:08:00 PM	R53391		
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	8/13/2018 11:08:00 PM	R53391		
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	8/13/2018 11:08:00 PM	R53391		
Surr: Dibromofluoromethane	112	0	70-130		%Rec	1	8/13/2018 11:08:00 PM	R53391		
Surr: Toluene-d8	91.6	0	70-130		%Rec	1	8/13/2018 11:08:00 PM	R53391		
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG			
Gasoline Range Organics (GRO)	0.034	0.0097	0.050	J	mg/L	1	8/10/2018 4:39:05 PM	A53346		
Surr: BFB	103	0	70-130	-	%Rec	1	8/10/2018 4:39:05 PM	A53346		
CARBON DIOXIDE							Analyst: JRR			

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

**Qualifiers:** \* Value exceeds Maximum Contaminant Level. В Analyte detected in the associated Method Blank

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

Hall Environmental Analysis Laboratory, Inc.

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

Е Value above quantitation range

J Analyte detected below quantitation limits Page 7 of 58

Р Sample pH Not In Range

RL Reporting Detection Limit

**Analytical Report** Lab Order 1808540

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT:	Andeavor Bloomfield			Client	Sample	e <b>ID:</b> MW	7-63		
Project:	8-8-18 RCRA WELLS and REF	INERY		Colle	ection I	<b>Date:</b> 8/8/2	2018	9:30:00 AM	
Lab ID:	1808540-002	Matrix:	AQUEOUS	Rec	eived I	<b>Date:</b> 8/9/2	2018	6:50:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON	DIOXIDE							Analyst: JR	R
Total Carb	oon Dioxide	610	0	1.0	Н	mg CO2/	1	8/16/2018 2:46:20 PN	I R53511
SM2320B:	ALKALINITY							Analyst: JR	R
Bicarbona	te (As CaCO3)	616.5	20.00	20.00		mg/L Ca	1	8/16/2018 2:46:20 PM	I R53511
Carbonate	e (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	8/16/2018 2:46:20 PM	I R53511
Total Alka	linity (as CaCO3)	616.5	20.00	20.00		mg/L Ca	1	8/16/2018 2:46:20 PM	I R53511

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
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 8 of 58
- Р Sample pH Not In Range RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

## Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield		Client Sample ID: MW-31									
Project: 8-8-18 RCRA WELLS and RE	FINERY		Coll	ection I	<b>Date:</b> 8/8	8/2018	10:00:00 AM				
Lab ID: 1808540-003	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/9	0/2018	6:50:00 AM				
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID			
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm				
Diesel Range Organics (DRO)	0.64	0.31	0.40		mg/L	1	8/13/2018 6:10:56 PM	39725			
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/13/2018 6:10:56 PM	39725			
Surr: DNOP	112	0	76.6-135		%Rec	1	8/13/2018 6:10:56 PM	39725			
EPA METHOD 300.0: ANIONS							Analyst: MR	4			
Fluoride	ND	0.030	0.10		mg/L	1	8/21/2018 2:39:08 AM	R53555			
Chloride	140	0.59	10		mg/L	20	8/9/2018 9:12:07 PM	A53348			
Nitrogen, Nitrite (As N)	0.053	0.048	0.10	J	mg/L	1	8/9/2018 8:59:16 PM	A53348			
Bromide	1.2	0.027	0.10		mg/L	1	8/9/2018 8:59:16 PM	A53348			
Nitrogen, Nitrate (As N)	0.25	0.0066	0.10		mg/L	1	8/9/2018 8:59:16 PM	A53348			
Phosphorus, Orthophosphate (As P)	ND	0.093	0.50		mg/L	1	8/9/2018 8:59:16 PM	A53348			
Sulfate	55	4.1	10		mg/L	20	8/9/2018 9:12:07 PM	A53348			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000074	0.000038	0.00020	J	mg/L	1	8/31/2018 10:32:26 AM	A 40077			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000077	0.000038	0.00020	Filtered	J mg/L	1	8/31/2018 10:34:41 AM	A 40077			
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: pmf				
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 5:40:35 PM	B53717			
Barium	0.89	0.00049	0.020		mg/L	1	8/22/2018 5:18:23 PM	B53642			
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:18:23 PM	B53642			
Calcium	110	0.15	5.0		mg/L	5	8/22/2018 5:58:04 PM	B53642			
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:18:23 PM	B53642			
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:18:23 PM	B53642			
Iron	0.097	0.010	0.020		mg/L	1	8/22/2018 5:18:23 PM	B53642			
Lead	ND	0.0050	0.0050		mg/L	1	8/22/2018 5:18:23 PM	B53642			
Magnesium	38	0.011	1.0		mg/L	1	8/22/2018 5:18:23 PM	B53642			
Manganese	0.65	0.00015	0.0020		mg/L	1	8/22/2018 5:18:23 PM	B53642			
Potassium	4.0	0.075	1.0		mg/L	1	8/22/2018 5:18:23 PM	B53642			
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 5:40:35 PM	B53717			
Silver	0.0032	0.0010	0.0050	J	mg/L	1	8/22/2018 5:18:23 PM	B53642			
Sodium	480	1.3	5.0		mg/L	5	8/22/2018 5:58:04 PM	B53642			
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 5:40:35 PM	B53717			
Zinc	ND	0.020	0.020		mg/L	1	8/22/2018 5:18:23 PM	B53642			
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: pmf				
Arsenic	ND	0.011	0.020		mg/L	1	8/13/2018 4:48:07 PM	39719			
Barium	0.90	0.020	0.020		mg/L	1	8/13/2018 1:35:36 PM	39719			
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 1:35:36 PM	39719			
Chromium	ND	0.0011	0.0060		mg/L	1	8/13/2018 1:35:36 PM	39719			

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

**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

Hall Environmental Analysis Laboratory, Inc.

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix В Analyte detected in the associated Method Blank

Е Value above quantitation range

- J Analyte detected below quantitation limits Page 9 of 58
- Р Sample pH Not In Range

RL Reporting Detection Limit

Lab Order 1808540

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and RE Lab ID: 1808540-003	EFINERY Matrix: A	QUEOUS	Client Colle Rec	Samplection I cetion I	e ID: MV Date: 8/8 Date: 8/9	W-31 \$/2018 9/2018	10:00:00 AM 6:50:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed H	Batch ID
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: pmf	
Lead	ND	0.0050	0.0050		mg/L	1	8/13/2018 8:52:34 PM	39719
Selenium	ND	0.024	0.050		mg/L	1	8/13/2018 1:35:36 PM	39719
Silver	0.0033	0.0018	0.0050	J	mg/L	1	8/13/2018 1:35:36 PM	39719
EPA METHOD 8260B: VOLATILES							Analyst: RAA	
Benzene	1500	17	100		µg/L	100	8/13/2018 11:32:00 PM	R53391
Toluene	760	1.7	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
Ethylbenzene	820	2.2	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
Methyl tert-butyl ether (MTBE)	ND	3.2	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,2,4-Trimethylbenzene	940	25	100		µg/L	100	8/13/2018 11:32:00 PM	R53391
1,3,5-Trimethylbenzene	24	2.3	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,2-Dichloroethane (EDC)	ND	4.0	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,2-Dibromoethane (EDB)	ND	2.3	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
Naphthalene	160	2.9	20		µg/L	10	8/13/2018 11:56:00 PM	R53391
1-Methylnaphthalene	45	3.4	40		µg/L	10	8/13/2018 11:56:00 PM	R53391
2-Methylnaphthalene	45	2.4	40		µg/L	10	8/13/2018 11:56:00 PM	R53391
Acetone	ND	7.9	100		µg/L	10	8/13/2018 11:56:00 PN	R53391
Bromobenzene	ND	3.2	10		µg/L	10	8/13/2018 11:56:00 PN	R53391
Bromodichloromethane	ND	2.8	10		µg/L	10	8/13/2018 11:56:00 PN	R53391
Bromoform	ND	3.2	10		µg/L	10	8/13/2018 11:56:00 PN	R53391
Bromomethane	ND	2.6	30		µg/L	10	8/13/2018 11:56:00 PN	R53391
2-Butanone	ND	13	100		µg/L	10	8/13/2018 11:56:00 PN	R53391
Carbon disulfide	ND	3.9	100		µg/∟	10	8/13/2018 11:56:00 PN	R53391
	ND	1.3	10		µg/∟	10	8/13/2018 11:56:00 PN	R53391
	ND	2.9	10		µg/∟	10	8/13/2018 11:56:00 PN	R53391
Chloroferm	ND	1.0	20		µg/∟ ua/l	10	8/13/2018 11:56:00 PN	DE0204
Chloromethana		4.0	10		µg/∟ 	10	0/13/2010 11:50:00 PN	DE0001
2 Chloroteluane		2.9	30 10		µg/∟ ug/l	10	0/13/2010 11:50:00 PN	I ROSSEI
2-Chlorotoluene		4.0	10		µg/∟ ug/l	10	0/13/2010 11:50:00 PN	I ROSSEI
		4.0	10		µg/∟ ug/l	10	0/13/2010 11:50:00 PN	I ROSSEI
cis-1,2-DCE		3.0	10		µg/∟ ug/l	10	0/13/2010 11.30.00 FW	DE2201
1 2 Dibromo 3 chloropropano		3.0	20		µg/∟ ug/l	10	8/13/2018 11:56:00 PM	DE3301
Dibromochloromothano		4.7	20		µg/∟ ug/l	10	8/13/2018 11:56:00 PM	DE3301
Dibromomothano		2.4	10		µg/∟ ug/l	10	8/13/2018 11:56:00 PM	DE2201
		3.2	10		µg/∟ ug/l	10	8/13/2018 11:56:00 PM	DE2201
1.3-Dichlorobenzene		3.1 2.1	10		µg/∟ ⊔g/I	10	8/13/2018 11-56-00 PM	R52201
		3.1 1 O	10		µg/∟ ⊔g/I	10	8/13/2018 11-56-00 PM	R52201
Dichlorodifluoromethane		4.0	10		µg/∟ ⊔a/l	10	8/13/2018 11:56:00 PM	R53301
1,1-Dichloroethane	ND	4.0	10		µg/L	10	8/13/2018 11:56:00 PM	R53391

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

**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
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 10 of 58
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield <b>Project:</b> 8-8-18 RCRA WELLS and REF	INER Y		Client Colle	Sample ection I	e ID: M Date: 8/8	W-31 8/2018	10:00:00 AM	
Lab ID: 1808540-003	Matrix: A	QUEOUS	Rec	6:50:00 AM				
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID
EPA METHOD 8260B: VOLATILES							Analyst: <b>RAA</b>	
1,1-Dichloroethene	ND	1.2	10		µq/L	10	8/13/2018 11:56:00 PM	R53391
1,2-Dichloropropane	ND	1.5	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,3-Dichloropropane	ND	2.7	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
2,2-Dichloropropane	ND	1.8	20		μg/L	10	8/13/2018 11:56:00 PM	R53391
1,1-Dichloropropene	ND	1.6	10		μg/L	10	8/13/2018 11:56:00 PM	R53391
Hexachlorobutadiene	ND	8.0	10		μg/L	10	8/13/2018 11:56:00 PM	R53391
2-Hexanone	ND	9.1	100		µg/L	10	8/13/2018 11:56:00 PM	R53391
Isopropylbenzene	63	2.2	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
4-Isopropyltoluene	3.1	2.4	10	J	µg/L	10	8/13/2018 11:56:00 PM	R53391
4-Methyl-2-pentanone	ND	4.5	100		µg/L	10	8/13/2018 11:56:00 PM	R53391
Methylene Chloride	ND	2.1	30		µg/L	10	8/13/2018 11:56:00 PM	R53391
n-Butylbenzene	16	2.5	30	J	µg/L	10	8/13/2018 11:56:00 PM	R53391
n-Propylbenzene	210	2.4	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
sec-Butylbenzene	26	2.0	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
Styrene	ND	2.5	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
tert-Butylbenzene	ND	2.2	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,1,1,2-Tetrachloroethane	ND	2.5	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,1,2,2-Tetrachloroethane	ND	3.3	20		µg/L	10	8/13/2018 11:56:00 PM	R53391
Tetrachloroethene (PCE)	ND	1.5	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
trans-1,2-DCE	ND	1.8	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
trans-1,3-Dichloropropene	ND	2.8	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,2,3-Trichlorobenzene	ND	2.8	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,2,4-Trichlorobenzene	ND	2.7	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,1,1-Trichloroethane	ND	1.5	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,1,2-Trichloroethane	ND	2.3	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
Trichloroethene (TCE)	ND	2.6	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
Trichlorofluoromethane	ND	1.7	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
1,2,3-Trichloropropane	ND	5.7	20		µg/L	10	8/13/2018 11:56:00 PM	R53391
Vinyl chloride	ND	1.1	10		µg/L	10	8/13/2018 11:56:00 PM	R53391
Xylenes, Total	1400	6.4	15		µg/L	10	8/13/2018 11:56:00 PM	R53391
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	10	8/13/2018 11:56:00 PM	R53391
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	10	8/13/2018 11:56:00 PM	R53391
Surr: Dibromofluoromethane	112	0	70-130		%Rec	10	8/13/2018 11:56:00 PM	R53391
Surr: Toluene-d8	94.8	0	70-130		%Rec	10	8/13/2018 11:56:00 PM	R53391
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	18	0.19	1.0		mg/L	20	8/13/2018 4:04:15 PM	B53389
Surr: BFB	93.0	0	70-130		%Rec	20	8/13/2018 4:04:15 PM	B53389
CARBON DIOXIDE							Analyst: sat	

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

**Qualifiers:** \* Value exceeds Maximum Contaminant Level. В

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded

Hall Environmental Analysis Laboratory, Inc.

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 11 of 58
- Р Sample pH Not In Range

RL Reporting Detection Limit

Analytical Report Lab Order 1808540

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Project:	Andeavor Bloomfield 8-8-18 RCRA WELLS and REF	INERY		Client Colle	10:00:00 AM					
Lab ID:	1808540-003	Matrix: A	AQUEOUS	US Received Date: 8/9/2018 6:50:00 AM						
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID	
CARBON	DIOXIDE							Analyst: <b>sat</b>		
Total Carb	oon Dioxide	1100	0	2.5	Н	mg CO2	2/ 2.5	8/21/2018 11:30:42 AM	1 R53613	
SM2320B:	ALKALINITY							Analyst: sat		
Bicarbona	te (As CaCO3)	1217	50.00	50.00		mg/L Ca	a 2.5	8/21/2018 11:30:42 AM	1 R53613	
Carbonate	e (As CaCO3)	ND	5.000	5.000		mg/L Ca	a 2.5	8/21/2018 11:30:42 AM	1 R53613	
Total Alka	linity (as CaCO3)	1217	50.00	50.00		mg/L Ca	a 2.5	8/21/2018 11:30:42 AM	1 R53613	

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
- PQL Practical Quanitative Limit
- 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 Page 12 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and RE Lab ID: 1808540-004	Client Sample ID: MW-62         Collection Date: 8/8/2018 10:50:00 AM         Matrix: AQUEOUS       Received Date: 8/9/2018 6:50:00 AM							
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm	
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/13/2018 6:35:48 PM	39725
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/13/2018 6:35:48 PM	39725
Surr: DNOP	112	0	76.6-135		%Rec	1	8/13/2018 6:35:48 PM	39725
EPA METHOD 300.0: ANIONS							Analyst: MRA	1
Fluoride	ND	0.15	0.50		mg/L	5	8/21/2018 2:51:33 AM	R53555
Chloride	11	0.029	0.50		mg/L	1	8/9/2018 9:24:59 PM	A53348
Nitrogen, Nitrite (As N)	0.068	0.048	0.10	J	mg/L	1	8/9/2018 9:24:59 PM	A53348
Bromide	0.22	0.027	0.10		mg/L	1	8/9/2018 9:24:59 PM	A53348
Nitrogen, Nitrate (As N)	0.078	0.0066	0.10	J	mg/L	1	8/9/2018 9:24:59 PM	A53348
Phosphorus, Orthophosphate (As P)	6.7	1.9	10	J	mg/L	20	8/9/2018 9:37:51 PM	A53348
Sulfate	3600	21	50		mg/L	100	8/21/2018 3:28:46 AM	R53555
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.000066	0.000038	0.00020	J	mg/L	1	8/31/2018 10:41:35 AM	i 40077
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.000074	0.000038	0.00020	Filtered	J mg/L	1	8/31/2018 10:43:51 AM	1 40077
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: pmf	
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 5:42:22 PM	B53717
Barium	0.011	0.00049	0.020	J	mg/L	1	8/22/2018 5:20:12 PM	B53642
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:20:12 PM	B53642
Calcium	450	0.15	5.0		mg/L	5	8/22/2018 6:01:42 PM	B53642
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:20:12 PM	B53642
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:20:12 PM	B53642
Iron	0.015	0.010	0.020	J	mg/L	1	8/22/2018 5:20:12 PM	B53642
Lead	ND	0.0050	0.0050		mg/L	1	8/22/2018 5:20:12 PM	B53642
Magnesium	37	0.011	1.0		mg/L	1	8/22/2018 5:20:12 PM	B53642
Manganese	1.5	0.00074	0.010		mg/L	5	8/22/2018 6:01:42 PM	B53642
Potassium	9.0	0.075	1.0		mg/L	1	8/22/2018 5:20:12 PM	B53642
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 5:42:22 PM	B53717
Silver	0.012	0.0010	0.0050		mg/L	1	8/22/2018 5:20:12 PM	B53642
Sodium	1400	5.3	20		mg/L	20	8/22/2018 6:03:32 PM	B53642
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 5:42:22 PM	B53717
Zinc	ND	0.020	0.020		mg/L	1	8/22/2018 5:20:12 PM	B53642
EPA 6010B: TOTAL RECOVERABLE MET	TALS						Analyst: <b>pmf</b>	
Arsenic	ND	0.011	0.020		mg/L	1	8/13/2018 4:49:33 PM	39719
Barium	0.030	0.020	0.020		mg/L	1	8/13/2018 1:37:29 PM	39719
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 1:37:29 PM	39719
Chromium	ND	0.0011	0.0060		mg/L	1	8/13/2018 1:37:29 PM	39719
Refer to the OC Summary report a	and sample l	ogin checklis	st for flage	red OC	data and	nrese	rvation information	

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

**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

Hall Environmental Analysis Laboratory, Inc.

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits Page 13 of 58

Р Sample pH Not In Range

RL Reporting Detection Limit

Lab Order 1808540

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and REF	INERY	VERY Client Sample ID: MW-62 Collection Date: 8/8/2018 10:50:00 AM								
Lab ID: 1808540-004	Matrix:	AQUEOUS	Rec	eived I	<b>Date:</b> 8/9	0/2018	6:50:00 AM			
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID		
EPA 6010B: TOTAL RECOVERABLE MET	ALS						Analyst: pmf			
Lead	ND	0.0050	0.0050		mg/L	1	8/13/2018 8:54:02 PM	39719		
Selenium	ND	0.024	0.050		mg/L	1	8/13/2018 1:37:29 PM	39719		
Silver	0.013	0.0018	0.0050		mg/L	1	8/13/2018 1:37:29 PM	39719		
EPA METHOD 8260B: VOLATILES							Analyst: RAA	4		
Benzene	ND	0.17	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
Toluene	ND	0.17	1.0		μg/L	1	8/14/2018 12:20:00 AM	A R53391		
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
1,2,4-Trimethylbenzene	0.28	0.25	1.0	J	µg/L	1	8/14/2018 12:20:00 AM	A R53391		
1,3,5-Trimethylbenzene	ND	0.23	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
1,2-Dichloroethane (EDC)	ND	0.40	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
1,2-Dibromoethane (EDB)	ND	0.23	1.0		µg/L	1	8/14/2018 12:20:00 AM	N R53391		
Naphthalene	ND	0.29	2.0		µg/L	1	8/14/2018 12:20:00 AM	N R53391		
1-Methylnaphthalene	ND	0.34	4.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
2-Methylnaphthalene	ND	0.24	4.0		µg/L	1	8/14/2018 12:20:00 AM	N R53391		
Acetone	ND	0.79	10		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
Bromobenzene	ND	0.32	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
Bromodichloromethane	ND	0.28	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
Bromoform	ND	0.32	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
Bromomethane	ND	0.26	3.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
2-Butanone	ND	1.3	10		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
Carbon disulfide	ND	0.39	10		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
Carbon Tetrachloride	ND	0.13	1.0		µg/L	1	8/14/2018 12:20:00 AM	N R53391		
Chlorobenzene	ND	0.29	1.0		µg/L	1	8/14/2018 12:20:00 AM	N R53391		
Chloroethane	ND	0.16	2.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
Chloroform	ND	0.40	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
Chloromethane	ND	0.29	3.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
4-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
cis-1,2-DCE	ND	0.38	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
cis-1,3-Dichloropropene	ND	0.30	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
1,2-Dibromo-3-chloropropane	ND	0.47	2.0		µg/L	1	8/14/2018 12:20:00 AM	M R53391		
Dibromochloromethane	ND	0.24	1.0		µg/L	1	8/14/2018 12:20:00 AM	M R53391		
Dibromomethane	ND	0.32	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
1,2-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
1,3-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
1,4-Dichlorobenzene	ND	0.40	1.0		µg/L	1	8/14/2018 12:20:00 AM	N R53391		
Dichlorodifluoromethane	ND	1.0	1.0		µg/L	1	8/14/2018 12:20:00 AM	A R53391		
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	8/14/2018 12:20:00 AM	M R53391		

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level. D

- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 14 of 58
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield		Client Sample ID: MW-62							
Project: 8-8-18 RCRA WELLS and RE	FINERY		Coll	ection I	<b>Date:</b> 8/8	3/2018	10:50:00 AM		
Lab ID: 1808540-004	Matrix: A	QUEOUS	Rec	eived I	<b>Date:</b> 8/9	9/2018	6:50:00 AM		
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID	
EPA METHOD 8260B: VOLATILES							Analyst: RAA		
1,1-Dichloroethene	ND	0.12	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
1,3-Dichloropropane	ND	0.27	1.0		μg/L	1	8/14/2018 12:20:00 AM	R53391	
2,2-Dichloropropane	ND	0.18	2.0		μg/L	1	8/14/2018 12:20:00 AM	R53391	
1,1-Dichloropropene	ND	0.16	1.0		μg/L	1	8/14/2018 12:20:00 AM	R53391	
Hexachlorobutadiene	ND	0.80	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
2-Hexanone	ND	0.91	10		µg/L	1	8/14/2018 12:20:00 AM	R53391	
Isopropylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
4-Isopropyltoluene	ND	0.24	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
4-Methyl-2-pentanone	ND	0.45	10		µg/L	1	8/14/2018 12:20:00 AM	R53391	
Methylene Chloride	ND	0.21	3.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
n-Butylbenzene	ND	0.25	3.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
n-Propylbenzene	ND	0.24	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
sec-Butylbenzene	ND	0.20	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
Styrene	ND	0.25	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
tert-Butylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
1,1,1,2-Tetrachloroethane	ND	0.25	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
1,1,2,2-Tetrachloroethane	ND	0.33	2.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
trans-1,2-DCE	ND	0.18	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
trans-1,3-Dichloropropene	ND	0.28	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
1,2,3-Trichlorobenzene	ND	0.28	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
1,2,4-Trichlorobenzene	ND	0.27	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
1,1,1-Trichloroethane	ND	0.15	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
1,1,2-Trichloroethane	ND	0.23	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
Trichloroethene (TCE)	ND	0.26	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
Trichlorofluoromethane	ND	0.17	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
1,2,3-Trichloropropane	ND	0.57	2.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
Vinyl chloride	ND	0.11	1.0		µg/L	1	8/14/2018 12:20:00 AM	R53391	
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/14/2018 12:20:00 AM	R53391	
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	8/14/2018 12:20:00 AM	R53391	
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	8/14/2018 12:20:00 AM	R53391	
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	8/14/2018 12:20:00 AM	R53391	
Surr: Toluene-d8	94.7	0	70-130		%Rec	1	8/14/2018 12:20:00 AM	R53391	
EPA METHOD 8015D: GASOLINE RANGE	E						Analyst: AG		
Gasoline Range Organics (GRO)	0.023	0.0097	0.050	J	mg/L	1	8/13/2018 3:17:46 PM	B53389	
Surr: BFB	104	0	70-130		%Rec	1	8/13/2018 3:17:46 PM	B53389	
CARBON DIOXIDE							Analyst: JRR		

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

**Qualifiers:** \* Value exceeds Maximum Contaminant Level. В Analyte detected in the associated Method Blank

> D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

Hall Environmental Analysis Laboratory, Inc.

ND Not Detected at the Reporting Limit

- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 15 of 58
- Р Sample pH Not In Range

RL Reporting Detection Limit

Analytical Report Lab Order 1808540

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT:	Andeavor Bloomfield	Client Sample ID: MW-62							
Project:	8-8-18 RCRA WELLS and REF	INERY		Colle	ection L	<b>Date:</b> 8/8/2	2018	10:50:00 AM	
Lab ID:	1808540-004	Matrix:	AQUEOUS	US Received Date: 8/9/2018 6:50:00 AM					
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON	DIOXIDE							Analyst: JRI	२
Total Carb	oon Dioxide	600	0	1.0	Н	mg CO2/	1	8/16/2018 3:47:24 PM	1 R53511
SM2320B:	ALKALINITY							Analyst: JRI	र
Bicarbona	te (As CaCO3)	622.9	20.00	20.00		mg/L Ca	1	8/16/2018 3:47:24 PM	1 R53511
Carbonate	e (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	8/16/2018 3:47:24 PM	1 R53511
Total Alka	linity (as CaCO3)	622.9	20.00	20.00		mg/L Ca	1	8/16/2018 3:47:24 PM	1 R53511

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
- PQL Practical Quanitative Limit
- 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 Page 16 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and	Andeavor Bloomfield 8-8-18 RCRA WELLS and REFINERY 1808540-005 Matrix: AOUEOU						Client Sample ID: Trip Blank Collection Date: Received Date: 8/9/2018 6:50:00 AM						
Analyses	Result	MDL	PQL	Qual	Units	<b>DF</b>	Date Analyzed	Batch ID					
EPA METHOD 8260B: VOLATILES							Analyst: RAA	A					
Benzene	ND	0.17	1.0		µg/L	1	8/14/2018 12:44:00 AM	A R53391					
Toluene	ND	0.17	1.0		µg/L	1	8/14/2018 12:44:00 AM	N R53391					
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 12:44:00 AM	M R53391					
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/14/2018 12:44:00 AM	N R53391					
1,2,4-Trimethylbenzene	ND	0.25	1.0		µg/L	1	8/14/2018 12:44:00 AM	N R53391					
1,3,5-Trimethylbenzene	ND	0.23	1.0		µg/L	1	8/14/2018 12:44:00 AM	M R53391					
1,2-Dichloroethane (EDC)	ND	0.40	1.0		µg/L	1	8/14/2018 12:44:00 AM	A R53391					
1,2-Dibromoethane (EDB)	ND	0.23	1.0		µg/L	1	8/14/2018 12:44:00 AM	M R53391					
Naphthalene	ND	0.29	2.0		µg/L	1	8/14/2018 12:44:00 AM	M R53391					
1-Methylnaphthalene	ND	0.34	4.0		µg/L	1	8/14/2018 12:44:00 AP	M R53391					
2-Methylnaphthalene	ND	0.24	4.0		µg/L	1	8/14/2018 12:44:00 AP	A DE0204					
Acetone	ND	0.79	10		µg/∟ ug/l	1	8/14/2018 12:44:00 Al	A DE2201					
Bromodiableromethane		0.32	1.0		µg/∟ ug/l	1	0/14/2010 12.44.00 Al	A DE2201					
Bromotorm		0.20	1.0		µg/∟ ug/l	1	8/14/2018 12:44:00 Al	A R53301					
Bromomethane	ND	0.32	3.0		µg/∟ ⊔a/l	1	8/14/2018 12:44:00 A	A R53301					
2-Butanone	ND	1.3	10		μg/L μα/Ι	1	8/14/2018 12:44:00 A	A R53391					
Carbon disulfide	ND	0.39	10		µg/L	1	8/14/2018 12:44:00 A	A R53391					
Carbon Tetrachloride	ND	0.13	1.0		ua/L	1	8/14/2018 12:44:00 AM	A R53391					
Chlorobenzene	ND	0.29	1.0		µg/L	1	8/14/2018 12:44:00 AM	A R53391					
Chloroethane	ND	0.16	2.0		μg/L	1	8/14/2018 12:44:00 AM	A R53391					
Chloroform	ND	0.40	1.0		μg/L	1	8/14/2018 12:44:00 AM	A R53391					
Chloromethane	ND	0.29	3.0		µg/L	1	8/14/2018 12:44:00 AM	N R53391					
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/14/2018 12:44:00 AM	N R53391					
4-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/14/2018 12:44:00 AM	N R53391					
cis-1,2-DCE	ND	0.38	1.0		µg/L	1	8/14/2018 12:44:00 AM	N R53391					
cis-1,3-Dichloropropene	ND	0.30	1.0		µg/L	1	8/14/2018 12:44:00 AM	N R53391					
1,2-Dibromo-3-chloropropane	ND	0.47	2.0		µg/L	1	8/14/2018 12:44:00 AM	N R53391					
Dibromochloromethane	ND	0.24	1.0		µg/L	1	8/14/2018 12:44:00 AM	M R53391					
Dibromomethane	ND	0.32	1.0		µg/L	1	8/14/2018 12:44:00 AM	M R53391					
1,2-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/14/2018 12:44:00 AM	N R53391					
1,3-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/14/2018 12:44:00 AM	A R53391					
1,4-Dichlorobenzene	ND	0.40	1.0		µg/L	1	8/14/2018 12:44:00 A	M R53391					
Dichlorodifluoromethane	ND	1.0	1.0		µg/L	1	8/14/2018 12:44:00 AF	M R53391					
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1 ₄	8/14/2018 12:44:00 A	VI R53391					
		0.12	1.0		µg/∟	1	8/14/2018 12:44:00 A	VI K53391					
		0.15	1.0		µg/∟ ug/!	1	0/14/2010 12:44:00 A	VI R03391					
2.2-Dichloropropane	<b>ט</b> או חוא	0.27	1.0		µg/∟ ug/l	1	8/14/2018 12:44:00 A	VI R00091					
z,z-Dichioropropane	ND	0.16	2.0		µy/∟	I	0/14/2010 12.44.00 A	w K03391					

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 17 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield <b>Project:</b> 8-8-18 RCRA WELLS and REF	INERY		Client Sample ID: Trip Blank Collection Date:							
Lab ID: 1808540-005	Matrix: A	QUEOUS	Rec	eived I	<b>Date:</b> 8/9	0/2018	6:50:00 AM			
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID		
EPA METHOD 8260B: VOLATILES							Analyst: RAA			
1,1-Dichloropropene	ND	0.16	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
Hexachlorobutadiene	ND	0.80	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
2-Hexanone	ND	0.91	10		µg/L	1	8/14/2018 12:44:00 AM	R53391		
Isopropylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
4-Isopropyltoluene	ND	0.24	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
4-Methyl-2-pentanone	ND	0.45	10		µg/L	1	8/14/2018 12:44:00 AM	R53391		
Methylene Chloride	ND	0.21	3.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
n-Butylbenzene	ND	0.25	3.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
n-Propylbenzene	ND	0.24	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
sec-Butylbenzene	ND	0.20	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
Styrene	ND	0.25	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
tert-Butylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
1,1,1,2-Tetrachloroethane	ND	0.25	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
1,1,2,2-Tetrachloroethane	ND	0.33	2.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
trans-1,2-DCE	ND	0.18	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
trans-1,3-Dichloropropene	ND	0.28	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
1,2,3-Trichlorobenzene	ND	0.28	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
1,2,4-Trichlorobenzene	ND	0.27	1.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
1,1,1-Trichloroethane	ND	0.15	1.0		μg/L	1	8/14/2018 12:44:00 AM	R53391		
1,1,2-Trichloroethane	ND	0.23	1.0		μg/L	1	8/14/2018 12:44:00 AM	R53391		
Trichloroethene (TCE)	ND	0.26	1.0		μg/L	1	8/14/2018 12:44:00 AM	R53391		
Trichlorofluoromethane	ND	0.17	1.0		μg/L	1	8/14/2018 12:44:00 AM	R53391		
1,2,3-Trichloropropane	ND	0.57	2.0		µg/L	1	8/14/2018 12:44:00 AM	R53391		
Vinyl chloride	ND	0.11	1.0		μg/L	1	8/14/2018 12:44:00 AM	R53391		
Xylenes, Total	ND	0.64	1.5		μg/L	1	8/14/2018 12:44:00 AM	R53391		
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	8/14/2018 12:44:00 AM	R53391		
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	8/14/2018 12:44:00 AM	R53391		
Surr: Dibromofluoromethane	110	0	70-130		%Rec	1	8/14/2018 12:44:00 AM	R53391		
Surr: Toluene-d8	93.7	0	70-130		%Rec	1	8/14/2018 12:44:00 AM	R53391		
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG			
Gasoline Range Organics (GRO)	0.037	0.0097	0.050	J	ma/l	1	8/10/2018 5:48:38 PM	A53346		
Surr: BFB	98.8	0	70-130	•	%Rec	1	8/10/2018 5:48:38 PM	A53346		
		~								

Hall Environmental Analysis Laboratory, Inc.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method B	lank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 18 of 58
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	1 460 10 01 50
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit	as specified

#### Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield			Client	t Sampl	e ID: M	W-65					
Project: 8-8-18 RCRA WELLS and RE	FINERY	Collection Date: 8/8/2018 11:30:00 AM									
Lab ID: 1808540-006	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/9	9/2018	/2018 6:50:00 AM				
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID			
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm				
Diesel Range Organics (DRO)	2.8	0.31	0.40		mg/L	1	8/13/2018 7:00:22 PM	39725			
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/13/2018 7:00:22 PM	39725			
Surr: DNOP	112	0	76.6-135		%Rec	1	8/13/2018 7:00:22 PM	39725			
EPA METHOD 300.0: ANIONS							Analyst: MRA				
Fluoride	ND	0.15	0.50		mg/L	5	8/9/2018 10:16:27 PM	A53348			
Chloride	200	0.59	10		mg/L	20	8/9/2018 10:29:18 PM	A53348			
Nitrogen, Nitrite (As N)	ND	0.24	0.50		mg/L	5	8/9/2018 10:16:27 PM	A53348			
Bromide	5.0	0.13	0.50		mg/L	5	8/9/2018 10:16:27 PM	A53348			
Nitrogen, Nitrate (As N)	0.21	0.033	0.50	J	mg/L	5	8/9/2018 10:16:27 PM	A53348			
Phosphorus, Orthophosphate (As P)	3.0	0.46	2.5		mg/L	5	8/9/2018 10:16:27 PM	A53348			
Sulfate	560	4.1	10		mg/L	20	8/9/2018 10:29:18 PM	A53348			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000075	0.000038	0.00020	J	mg/L	1	8/31/2018 10:46:09 AM	40077			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000070	0.000038	0.00020	Filtered	J mg/L	1	8/31/2018 10:48:27 AM	40077			
EPA METHOD 6010B: DISSOLVED META	ALS						Analyst: pmf				
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 5:44:24 PM	B53717			
Barium	0.12	0.00049	0.020		mg/L	1	8/22/2018 5:22:08 PM	B53642			
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:22:08 PM	B53642			
Calcium	200	0.15	5.0		mg/L	5	8/22/2018 6:05:21 PM	B53642			
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:22:08 PM	B53642			
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:22:08 PM	B53642			
Iron	5.3	0.10	0.20		mg/L	10	8/22/2018 6:07:00 PM	B53642			
Lead	ND	0.0050	0.0050		mg/L	1	8/22/2018 5:22:08 PM	B53642			
Magnesium	95	0.011	1.0		mg/L	1	8/22/2018 5:22:08 PM	B53642			
Manganese	1.5	0.00074	0.010		mg/L	5	8/22/2018 6:05:21 PM	B53642			
Potassium	3.6	0.075	1.0		mg/L	1	8/22/2018 5:22:08 PM	B53642			
Selenium	0.032	0.020	0.050	J	mg/L	1	8/27/2018 5:44:24 PM	B53717			
Silver	0.0045	0.0010	0.0050	J	mg/L	1	8/22/2018 5:22:08 PM	B53642			
Sodium	550	2.6	10		mg/L	10	8/22/2018 6:07:00 PM	B53642			
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 5:44:24 PM	B53717			
Zinc	ND	0.020	0.020		mg/L	1	8/22/2018 5:22:08 PM	B53642			
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: <b>pmf</b>				
Arsenic	ND	0.011	0.020		mg/L	1	8/13/2018 4:50:59 PM	39719			
Barium	0.061	0.020	0.020		mg/L	1	8/13/2018 1:39:09 PM	39719			
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 1:39:09 PM	39719			
Chromium	ND	0.0011	0.0060		mg/L	1	8/13/2018 1:39:09 PM	39719			
Defer to the OC Summer report.	and commute to	anin ahaalili	t for floor	20100	data and	-	mustion information				

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

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

Hall Environmental Analysis Laboratory, Inc.

PQL Practical Quanitative Limit

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 Page 19 of 58

P Sample pH Not In Range

RL Reporting Detection Limit

Lab Order 1808540

## Hall Environmental Analysis Laboratory, Inc. Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and REF	TINERY		Client Colle	Sample ection I	e ID: M Date: 8/8	W-65 3/2018	11:30:00 AM	
Analyses	Result	MDL		Oual	Jate: 8/9	DF	Date Analyzed	Batch ID
			1 42	Quui	emus	DI	Dute Hindy Zea	
EPA 6010B: TOTAL RECOVERABLE MET	ALS						Analyst: pm	f 
	ND	0.0050	0.0050		mg/L	1	8/13/2018 8:55:28 PN	A 39719
Selenium	ND 0.0065	0.024	0.050		mg/L	1	8/13/2018 1:39:09 PN	/ 39/19
	0.0005	0.0018	0.0050		mg/∟	I	0/13/2018 1.39.09 Fit	•
EPA METHOD 8270C: SEMIVOLATILES								
Acenaphthene	ND	5.8	10		µg/L	1	8/15/2018 1:21:50 PN	A 39765
Acenaphthylene		6.Z	10		µg/∟ ug/l	1	8/15/2018 1:21:50 PN	/ 39/05
		0.2 5.7	10		µg/∟ ug/l	1	8/15/2018 1:21:50 PM	/ 39705
Azohenzene	ND	6.7	10		µg/∟ ⊔a/l	1	8/15/2018 1:21:50 PM	1 39765
Benz(a)anthracene	ND	5.3	10		µg/⊑ µɑ/l	1	8/15/2018 1:21:50 PM	A 39765
Benzo(a)pyrene	ND	6.0	10		µg/= µa/L	1	8/15/2018 1:21:50 PM	A 39765
Benzo(b)fluoranthene	ND	7.1	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
Benzo(g,h,i)perylene	ND	5.7	10		μg/L	1	8/15/2018 1:21:50 PM	/ 39765
Benzo(k)fluoranthene	ND	6.4	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
Benzoic acid	ND	6.3	20		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
Benzyl alcohol	ND	6.3	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
Bis(2-chloroethoxy)methane	ND	6.1	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
Bis(2-chloroethyl)ether	ND	6.3	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
Bis(2-chloroisopropyl)ether	ND	4.9	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
Bis(2-ethylhexyl)phthalate	ND	8.1	10		µg/L	1	8/15/2018 1:21:50 PN	/ 39765
4-Bromophenyl phenyl ether	ND	6.9	10		µg/L	1	8/15/2018 1:21:50 PN	A 39765
Butyl benzyl phthalate	ND	6.3	10		µg/L	1	8/15/2018 1:21:50 PN	A 39765
Carbazole	ND	6.3	10		µg/L	1	8/15/2018 1:21:50 PN	/ 39765
4-Chloro-3-methylphenol	ND	5.6	10		µg/∟ ug/l	1	8/15/2018 1:21:50 PN	/ 39/65
4-Chloropaphthalana		0.U 6 1	10		µg/∟ ug/l	1	8/15/2018 1:21:50 PM	/ 39700
2-Chlorophenol	ND	5.8	10		µg/∟ ⊔a/l	1	8/15/2018 1:21:50 PM	1 39765
4-Chlorophenyl phenyl ether	ND	7.2	10		µg/⊑ ⊔a/l	1	8/15/2018 1:21:50 PM	1 39765
Chrvsene	ND	6.8	10		µg/= ua/L	1	8/15/2018 1:21:50 PM	A 39765
Di-n-butyl phthalate	ND	6.8	10		µa/L	1	8/15/2018 1:21:50 PM	A 39765
Di-n-octyl phthalate	ND	6.3	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
Dibenz(a,h)anthracene	ND	5.6	10		μg/L	1	8/15/2018 1:21:50 PM	/ 39765
Dibenzofuran	ND	6.9	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
1,2-Dichlorobenzene	ND	6.0	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
1,3-Dichlorobenzene	ND	5.8	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
1,4-Dichlorobenzene	ND	5.8	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
3,3´-Dichlorobenzidine	ND	6.8	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765
Diethyl phthalate	ND	6.3	10		µg/L	1	8/15/2018 1:21:50 PN	1 39765
Dimethyl phthalate	ND	6.0	10		µg/L	1	8/15/2018 1:21:50 PM	/ 39765

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

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
- PQL Practical Quanitative Limit
- 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 Page 20 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and RE Lab ID: 1808540-006	FINERY Matrix: A	QUEOUS	Client Colle Rec	Sample ID: M ection Date: 8/8 ceived Date: 8/9	11:30:00 AM 6:50:00 AM		
Analyses	Result	MDL	PQL	Qual Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC	)
2,4-Dichlorophenol	ND	5.8	20	µg/L	1	8/15/2018 1:21:50 PM	39765
2,4-Dimethylphenol	21	5.9	10	μg/L	1	8/15/2018 1:21:50 PM	39765
4,6-Dinitro-2-methylphenol	ND	5.4	20	µg/L	1	8/15/2018 1:21:50 PM	39765
2,4-Dinitrophenol	ND	3.7	20	µg/L	1	8/15/2018 1:21:50 PM	39765
2,4-Dinitrotoluene	ND	5.8	10	µg/L	1	8/15/2018 1:21:50 PM	39765
2,6-Dinitrotoluene	ND	6.0	10	μg/L	1	8/15/2018 1:21:50 PM	39765
Fluoranthene	ND	5.8	10	μg/L	1	8/15/2018 1:21:50 PM	39765
Fluorene	ND	6.3	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Hexachlorobenzene	ND	6.2	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Hexachlorobutadiene	ND	6.4	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Hexachlorocyclopentadiene	ND	3.9	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Hexachloroethane	ND	6.0	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Indeno(1,2,3-cd)pyrene	ND	7.0	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Isophorone	ND	6.2	10	µg/L	1	8/15/2018 1:21:50 PM	39765
1-Methylnaphthalene	100	7.0	10	µg/L	1	8/15/2018 1:21:50 PM	39765
2-Methylnaphthalene	ND	6.3	10	µg/L	1	8/15/2018 1:21:50 PM	39765
2-Methylphenol	ND	6.3	10	µg/L	1	8/15/2018 1:21:50 PM	39765
3+4-Methylphenol	10	5.4	10	µg/L	1	8/15/2018 1:21:50 PM	39765
N-Nitrosodi-n-propylamine	ND	6.1	10	µg/L	1	8/15/2018 1:21:50 PM	39765
N-Nitrosodimethylamine	ND	6.9	10	µg/L	1	8/15/2018 1:21:50 PM	39765
N-Nitrosodiphenylamine	ND	6.7	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Naphthalene	21	5.0	10	µg/L	1	8/15/2018 1:21:50 PM	39765
2-Nitroaniline	ND	5.9	10	µg/L	1	8/15/2018 1:21:50 PM	39765
3-Nitroaniline	ND	6.8	10	µg/L	1	8/15/2018 1:21:50 PM	39765
4-Nitroaniline	ND	6.0	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Nitrobenzene	ND	6.0	10	µg/L	1	8/15/2018 1:21:50 PM	39765
2-Nitrophenol	ND	6.0	10	µg/L	1	8/15/2018 1:21:50 PM	39765
4-Nitrophenol	ND	5.6	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Pentachlorophenol	ND	5.3	20	µg/L	1	8/15/2018 1:21:50 PM	39765
Phenanthrene	ND	6.0	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Phenol	13	6.0	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Pyrene	ND	6.5	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Pyridine	ND	5.4	10	µg/L	1	8/15/2018 1:21:50 PM	39765
1,2,4-Trichlorobenzene	ND	6.4	10	µg/L	1	8/15/2018 1:21:50 PM	39765
2,4,5-Trichlorophenol	ND	5.8	10	µg/L	1	8/15/2018 1:21:50 PM	39765
2,4,6-Trichlorophenol	ND	6.4	10	µg/L	1	8/15/2018 1:21:50 PM	39765
Surr: 2-Fluorophenol	62.9	0	15-74.1	%Rec	1	8/15/2018 1:21:50 PM	39765
Surr: Phenol-d5	53.2	0	15-59.8	%Rec	1	8/15/2018 1:21:50 PM	39765
Surr: 2,4,6-Tribromophenol	72.2	0	22.1-112	%Rec	1	8/15/2018 1:21:50 PM	39765

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 21 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and REF Lab ID: 1808540-006	INERY Matrix: 4	AOUFOUS	Client Colle Bec	Sample ection I	e ID: M Date: 8/8	W-65 8/2018	11:30:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: <b>JD</b>	2
Surr: Nitrobenzene-d5	80.6	0	33.2-94		%Rec	1	8/15/2018 1:21:50 PM	1 39765
Surr: 2-Fluorobiphenyl	76.9	0	34-90.9		%Rec	1	8/15/2018 1:21:50 PM	39765
Surr: 4-Terphenyl-d14	86.2	0	15-149		%Rec	1	8/15/2018 1:21:50 PM	39765
EPA METHOD 8260B: VOLATILES							Analyst: RA	A
Benzene	4500	17	100		µg/L	100	8/14/2018 2:51:00 PM	I R53423
Toluene	7.6	1.7	10	J	μg/L	10	8/14/2018 3:16:00 PM	I R53423
Ethylbenzene	1800	22	100		µg/L	100	8/14/2018 2:51:00 PN	I R53423
Methyl tert-butyl ether (MTBE)	4600	32	100		µg/L	100	8/14/2018 2:51:00 PM	I R53423
1,2,4-Trimethylbenzene	590	2.5	10		µg/L	10	8/14/2018 3:16:00 PM	I R53423
1,3,5-Trimethylbenzene	41	2.3	10		µg/L	10	8/14/2018 3:16:00 PM	I R53423
1,2-Dichloroethane (EDC)	170	4.0	10		µg/L	10	8/14/2018 3:16:00 PM	I R53423
1,2-Dibromoethane (EDB)	ND	2.3	10		µg/L	10	8/14/2018 3:16:00 PN	I R53423
Naphthalene	51	2.9	20		µg/L	10	8/14/2018 3:16:00 PM	I R53423
1-Methylnaphthalene	110	3.4	40		µg/L	10	8/14/2018 3:16:00 PM	I R53423
2-Methylnaphthalene	12	2.4	40	J	µg/L	10	8/14/2018 3:16:00 PM	I R53423
Acetone	110	7.9	100		µg/L	10	8/14/2018 3:16:00 PM	I R53423
Bromobenzene	ND	3.2	10		µg/L	10	8/14/2018 3:16:00 PN	I R53423
Bromodichloromethane	ND	2.8	10		µg/L	10	8/14/2018 3:16:00 PN	R53423
Bromoform	ND	3.2	10		µg/L	10	8/14/2018 3:16:00 PN	I R53423
Bromomethane	ND	2.6	30		µg/L	10	8/14/2018 3:16:00 PN	I R53423
2-Butanone	ND	13	100		µg/L	10	8/14/2018 3:16:00 PN	I R53423
Carbon disulfide	ND	3.9	100		µg/L	10	8/14/2018 3:16:00 PN	R53423
	ND	1.3	10		µg/∟ 	10	8/14/2018 3:16:00 PN	I R53423
Chloropenzene	ND	2.9	10		µg/∟ 	10	8/14/2018 3:16:00 PN	I R53423
Chloroferm		1.0	20		µg/∟ ug/l	10	8/14/2018 3:16:00 PN	I R53423
Chloromothano		4.0	30		µg/∟ ug/l	10	8/14/2018 3:10:00 FIV	I R00420
2-Chlorotoluene		2.9	30 10		µg/∟ ug/l	10	8/14/2018 3:16:00 PM	I R53420
4-Chlorotoluene		4.0	10		µg/∟ ug/l	10	8/14/2018 3:16:00 PM	R53420
cis-1 2-DCE	ND	3.8	10		μg/L μα/Ι	10	8/14/2018 3:16:00 PM	R53423
cis-1.3-Dichloropropene	ND	3.0	10		µg/⊏ ua/l	10	8/14/2018 3:16:00 PM	R53423
1.2-Dibromo-3-chloropropane	ND	4.7	20		µg/⊏ ua/l	10	8/14/2018 3:16:00 PM	R53423
Dibromochloromethane	ND	2.4	10		µg/= ua/l	10	8/14/2018 3:16:00 PM	R53423
Dibromomethane	ND	3.2	10		ua/L	10	8/14/2018 3:16:00 PM	R53423
1.2-Dichlorobenzene	ND	3.1	10		µg/= ua/L	10	8/14/2018 3:16:00 PM	R53423
1,3-Dichlorobenzene	ND	3.1	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,4-Dichlorobenzene	ND	4.0	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
Dichlorodifluoromethane	ND	10	10		μg/L	10	8/14/2018 3:16:00 PM	R53423
1,1-Dichloroethane	ND	4.0	10		μg/L	10	8/14/2018 3:16:00 PN	R53423

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 22 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

#### Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and REF Lab ID: 1808540-006	INERY Matrix:	Client Sample ID: MW-65VERYCollection Date: 8/8/2018 11:30:00 AMMatrix: AQUEOUSReceived Date: 8/9/2018 6:50:00 AM						
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: RAA	4
1,1-Dichloroethene	ND	1.2	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,2-Dichloropropane	ND	1.5	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,3-Dichloropropane	ND	2.7	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
2,2-Dichloropropane	ND	1.8	20		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,1-Dichloropropene	ND	1.6	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
Hexachlorobutadiene	ND	8.0	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
2-Hexanone	ND	9.1	100		µg/L	10	8/14/2018 3:16:00 PM	R53423
Isopropylbenzene	91	2.2	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
4-Isopropyltoluene	12	2.4	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
4-Methyl-2-pentanone	ND	4.5	100		µg/L	10	8/14/2018 3:16:00 PM	R53423
Methylene Chloride	ND	2.1	30		µg/L	10	8/14/2018 3:16:00 PM	R53423
n-Butylbenzene	10	2.5	30	J	µg/L	10	8/14/2018 3:16:00 PM	R53423
n-Propylbenzene	300	2.4	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
sec-Butylbenzene	18	2.0	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
Styrene	ND	2.5	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
tert-Butylbenzene	ND	2.2	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,1,1,2-Tetrachloroethane	ND	2.5	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,1,2,2-Tetrachloroethane	ND	3.3	20		µg/L	10	8/14/2018 3:16:00 PM	R53423
Tetrachloroethene (PCE)	ND	1.5	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
trans-1,2-DCE	ND	1.8	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
trans-1,3-Dichloropropene	ND	2.8	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,2,3-Trichlorobenzene	ND	2.8	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,2,4-Trichlorobenzene	ND	2.7	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,1,1-Trichloroethane	ND	1.5	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,1,2-Trichloroethane	ND	2.3	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
Trichloroethene (TCE)	ND	2.6	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
Trichlorofluoromethane	ND	1.7	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
1,2,3-Trichloropropane	ND	5.7	20		µg/L	10	8/14/2018 3:16:00 PM	R53423
Vinyl chloride	ND	1.1	10		µg/L	10	8/14/2018 3:16:00 PM	R53423
Xylenes, Total	580	6.4	15		µg/L	10	8/14/2018 3:16:00 PM	R53423
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	10	8/14/2018 3:16:00 PM	R53423
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	10	8/14/2018 3:16:00 PM	R53423
Surr: Dibromofluoromethane	102	0	70-130		%Rec	10	8/14/2018 3:16:00 PM	R53423
Surr: Toluene-d8	91.4	0	70-130		%Rec	10	8/14/2018 3:16:00 PM	R53423
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	29	0.48	2.5		mg/L	50	8/10/2018 6:11:49 PM	A53346
Surr: BFB	94.9	0	70-130		%Rec	50	8/10/2018 6:11:49 PM	A53346
CARBON DIOXIDE							Analyst: <b>sat</b>	

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

**Qualifiers:** \* Value exceeds Maximum Contaminant Level. В

> D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

Hall Environmental Analysis Laboratory, Inc.

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

Analyte detected in the associated Method Blank

Е Value above quantitation range

- J Analyte detected below quantitation limits Page 23 of 58
- Р Sample pH Not In Range

RL Reporting Detection Limit

Analytical Report
Lab Order 1808540

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Project:	Andeavor Bloomfield 8-8-18 RCRA WELLS and REI	Client Sample ID: MW-65REFINERYCollection Date: 8/8/2018 11:30:00 AM							
Lab ID:	1808540-006	Matrix: AQUEOUS Received Date: 8/9/2018 6:50:00 AM							
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON	DIOXIDE							Analyst: <b>sa</b> t	:
Total Cart	bon Dioxide	1200	0	2.5	Н	mg CO2	2/ 2.5	8/21/2018 11:49:08 A	M R53613
SM2320B:	ALKALINITY							Analyst: <b>sa</b> t	:
Bicarbona	ate (As CaCO3)	1305	50.00	50.00		mg/L Ca	a 2.5	8/21/2018 11:49:08 A	M R53613
Carbonate	e (As CaCO3)	ND	5.000	5.000		mg/L Ca	a 2.5	8/21/2018 11:49:08 A	M R53613
Total Alka	alinity (as CaCO3)	1305	50.00	50.00		mg/L Ca	a 2.5	8/21/2018 11:49:08 A	M R53613

Qualifiers: * Val	e 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
- PQL Practical Quanitative Limit
- 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 Page 24 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

#### Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield			Client	t Sampl	e ID: M	W-70					
Project: 8-8-18 RCRA WELLS and RE	FINERY	<b>Collection Date:</b> 8/8/2018 12:25:00 PM									
Lab ID: 1808540-007	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/9	9/2018	6:50:00 AM				
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID			
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm				
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/13/2018 7:25:05 PM	39725			
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/13/2018 7:25:05 PM	39725			
Surr: DNOP	109	0	76.6-135		%Rec	1	8/13/2018 7:25:05 PM	39725			
EPA METHOD 300.0: ANIONS							Analyst: MRA				
Fluoride	ND	0.15	0.50		mg/L	5	8/9/2018 10:42:11 PM	A53348			
Chloride	280	0.59	10		mg/L	20	8/9/2018 10:55:02 PM	A53348			
Nitrogen, Nitrite (As N)	ND	0.24	0.50		mg/L	5	8/9/2018 10:42:11 PM	A53348			
Bromide	1.6	0.13	0.50		mg/L	5	8/9/2018 10:42:11 PM	A53348			
Nitrogen, Nitrate (As N)	0.23	0.033	0.50	J	mg/L	5	8/9/2018 10:42:11 PM	A53348			
Phosphorus, Orthophosphate (As P)	ND	0.46	2.5		mg/L	5	8/9/2018 10:42:11 PM	A53348			
Sulfate	1900	10	25		mg/L	50	8/21/2018 3:41:11 AM	R53555			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.00010	0.000038	0.00020	J	mg/L	1	8/31/2018 10:50:46 AM	40077			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000071	0.000038	0.00020	Filtered	J mg/L	1	8/31/2018 10:53:05 AM	40077			
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: pmf				
Arsenic	ND	0.020	0.020		mg/L	1	8/30/2018 1:18:00 PM	A53827			
Barium	0.014	0.00049	0.020	J	mg/L	1	8/22/2018 5:23:48 PM	B53642			
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:23:48 PM	B53642			
Calcium	560	0.31	10		mg/L	10	8/22/2018 6:10:32 PM	B53642			
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:23:48 PM	B53642			
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:23:48 PM	B53642			
Iron	9.6	0.10	0.20		mg/L	10	8/22/2018 6:10:32 PM	B53642			
Lead	ND	0.0050	0.0050		mg/L	1	8/22/2018 5:23:48 PM	B53642			
Magnesium	110	0.056	5.0		mg/L	5	8/22/2018 6:08:53 PM	B53642			
Manganese	1.8	0.00074	0.010		mg/L	5	8/22/2018 6:08:53 PM	B53642			
Potassium	4.0	0.075	1.0		mg/L	1	8/22/2018 5:23:48 PM	B53642			
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 5:49:42 PM	B53717			
Silver	0.015	0.0010	0.0050		mg/L	1	8/22/2018 5:23:48 PM	B53642			
Sodium	530	2.6	10		mg/L	10	8/22/2018 6:10:32 PM	B53642			
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 5:49:42 PM	B53717			
Zinc	ND	0.020	0.020		mg/L	1	8/22/2018 5:23:48 PM	B53642			
EPA 6010B: TOTAL RECOVERABLE MET	TALS						Analyst: pmf				
Arsenic	ND	0.011	0.020		mg/L	1	8/13/2018 4:52:25 PM	39719			
Barium	0.23	0.020	0.020		mg/L	1	8/13/2018 1:40:50 PM	39719			
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 1:40:50 PM	39719			
Chromium	0.011	0.0011	0.0060		mg/L	1	8/13/2018 1:40:50 PM	39719			
Refer to the OC Summary report	and sample h	ogin checklig	at for flag	red OC	data and	nrece	rvation information				

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

**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

Hall Environmental Analysis Laboratory, Inc.

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits Page 25 of 58

Р Sample pH Not In Range

RL Reporting Detection Limit

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and RE Lab ID: 1808540-007	EFINERY Matrix: A	QUEOUS	Client Colle Rec	Sample ection I ectived I	e ID: MV Date: 8/8 Date: 8/9	W-70 /2018 /2018	12:25:00 PM 6:50:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: pm	f
Lead	ND	0.0050	0.0050		mg/L	1	8/13/2018 1:40:50 PM	1 39719
Selenium	ND	0.024	0.050		mg/L	1	8/13/2018 1:40:50 PM	1 39719
Silver	0.0044	0.0018	0.0050	J	mg/L	1	8/13/2018 1:40:50 PM	1 39719
EPA METHOD 8260B: VOLATILES							Analyst: RA	A
Benzene	ND	0.17	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Toluene	ND	0.17	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
1,2,4-Trimethylbenzene	ND	0.25	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
1,3,5-Trimethylbenzene	ND	0.23	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
1,2-Dichloroethane (EDC)	ND	0.40	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
1,2-Dibromoethane (EDB)	ND	0.23	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Naphthalene	ND	0.29	2.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
1-Methylnaphthalene	ND	0.34	4.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
2-Methylnaphthalene	ND	0.24	4.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Acetone	ND	0.79	10		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Bromobenzene	ND	0.32	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Bromodichloromethane	ND	0.28	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Bromoform	ND	0.32	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Bromomethane	ND	0.26	3.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
2-Butanone	ND	1.3	10		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Carbon disulfide	ND	0.39	10		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Carbon Tetrachloride	ND	0.13	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Chlorobenzene	ND	0.29	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Chloroethane	ND	0.16	2.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Chloroform	ND	0.40	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Chloromethane	ND	0.29	3.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
4-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
cis-1,2-DCE	ND	0.38	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
cis-1,3-Dichloropropene	ND	0.30	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
1,2-Dibromo-3-chloropropane	ND	0.47	2.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Dibromochloromethane	ND	0.24	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Dibromomethane	ND	0.32	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
1,2-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
1,3-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
1,4-Dichlorobenzene	ND	0.40	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
Dichlorodifluoromethane	ND	1.0	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	8/14/2018 4:05:00 PM	1 R53423

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

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 Page 26 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor BloomfieldProject:8-8-18 RCRA WELLS and REFINERYLab ID:1808540-007Matrix:AQUEOUS					Client Sample ID: MW-70 Collection Date: 8/8/2018 12:25:00 PM Received Date: 8/9/2018 6:50:00 AM							
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID			
EPA METI	HOD 8260B: VOLATILES							Analyst: RAA	۱			
1,1-Dichlo	proethene	ND	0.12	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
1,2-Dichlo	propropane	ND	0.15	1.0		μg/L	1	8/14/2018 4:05:00 PM	R53423			
1,3-Dichlo	propropane	ND	0.27	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
2,2-Dichlo	propropane	ND	0.18	2.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
1,1-Dichlo	propropene	ND	0.16	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
Hexachlo	robutadiene	ND	0.80	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
2-Hexano	ne	ND	0.91	10		µg/L	1	8/14/2018 4:05:00 PM	R53423			
Isopropylk	benzene	ND	0.22	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
4-Isoprop	yltoluene	ND	0.24	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
4-Methyl-2	2-pentanone	ND	0.45	10		µg/L	1	8/14/2018 4:05:00 PM	R53423			
Methylene	e Chloride	ND	0.21	3.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
n-Butylbe	nzene	ND	0.25	3.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
n-Propylb	enzene	ND	0.24	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
sec-Butyll	benzene	ND	0.20	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
Styrene		ND	0.25	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
tert-Butylk	benzene	ND	0.22	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
1,1,1,2-T€	etrachloroethane	ND	0.25	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
1,1,2,2-Te	etrachloroethane	ND	0.33	2.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
Tetrachlo	roethene (PCE)	ND	0.15	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
trans-1,2-	DCE	ND	0.18	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
trans-1,3-	Dichloropropene	ND	0.28	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
1,2,3-Tric	hlorobenzene	ND	0.28	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
1,2,4-Tric	hlorobenzene	ND	0.27	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
1,1,1-Tric	hloroethane	ND	0.15	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
1,1,2-Tric	hloroethane	ND	0.23	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
Trichloroe	ethene (TCE)	ND	0.26	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
Trichlorof	luoromethane	ND	0.17	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
1,2,3-Tric	hloropropane	ND	0.57	2.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
Vinyl chlo	ride	ND	0.11	1.0		µg/L	1	8/14/2018 4:05:00 PM	R53423			
Xylenes,	Total	ND	0.64	1.5		µg/L	1	8/14/2018 4:05:00 PM	R53423			
Surr: 1,	,2-Dichloroethane-d4	105	0	70-130		%Rec	1	8/14/2018 4:05:00 PM	R53423			
Surr: 4-	-Bromofluorobenzene	99.6	0	70-130		%Rec	1	8/14/2018 4:05:00 PM	R53423			
Surr: D	ibromofluoromethane	104	0	70-130		%Rec	1	8/14/2018 4:05:00 PM	R53423			
Surr: To	oluene-d8	91.3	0	70-130		%Rec	1	8/14/2018 4:05:00 PM	R53423			
EPA METI	HOD 8015D: GASOLINE RANG	E						Analyst: AG				
Gasoline	Range Organics (GRO)	0.034	0.0097	0.050	J	mg/L	1	8/10/2018 7:21:05 PM	A53346			
Surr: B	FB	103	0	70-130		%Rec	1	8/10/2018 7:21:05 PM	A53346			
CARBON	DIOXIDE							Analyst: JRR				

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

H Holding times for preparation or analysis exceeded

Hall Environmental Analysis Laboratory, Inc.

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 27 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1808540

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT:	Andeavor Bloomfield			Client	Sample	e ID: MV	V-70		
Project:	8-8-18 RCRA WELLS and REF	EFINERY Collection Date: 8/8/2018 12:25:00 PM							
Lab ID:	1808540-007	Matrix: AQUEOUS Received Date: 8/9/2018 6:50:00 AM							
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON	DIOXIDE							Analyst: <b>JR</b>	R
Total Carb	oon Dioxide	790	0	1.0	Н	mg CO2	/ 1	8/16/2018 4:45:45 PI	M R53511
SM2320B:	ALKALINITY							Analyst: <b>JR</b>	R
Bicarbona	te (As CaCO3)	811.6	20.00	20.00		mg/L Ca	1	8/16/2018 4:45:45 PI	M R53511
Carbonate	e (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	8/16/2018 4:45:45 PI	M R53511
Total Alka	linity (as CaCO3)	811.6	20.00	20.00		mg/L Ca	1	8/16/2018 4:45:45 PI	M R53511

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
- PQL Practical Quanitative Limit
- 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 Page 28 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

## Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield			Client	t Sampl	e ID: MV	<b>W-44</b>					
Project: 8-8-18 RCRA WELLS and RE	FINERY	NERY Collection Date: 8/8/2018 1:05:00 PM									
Lab ID: 1808540-008	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/9	/2018	6:50:00 AM				
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID			
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm				
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/13/2018 7:49:41 PM	39725			
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/13/2018 7:49:41 PM	39725			
Surr: DNOP	106	0	76.6-135		%Rec	1	8/13/2018 7:49:41 PM	39725			
EPA METHOD 300.0: ANIONS							Analyst: MRA				
Fluoride	ND	0.15	0.50		mg/L	5	8/21/2018 3:53:35 AM	R53555			
Chloride	48	0.59	10		mg/L	20	8/9/2018 11:20:45 PM	A53348			
Nitrogen, Nitrite (As N)	0.079	0.048	0.10	J	mg/L	1	8/9/2018 11:07:54 PM	A53348			
Bromide	0.16	0.027	0.10		mg/L	1	8/9/2018 11:07:54 PM	A53348			
Nitrogen, Nitrate (As N)	0.050	0.0066	0.10	J	mg/L	1	8/9/2018 11:07:54 PM	A53348			
Phosphorus, Orthophosphate (As P)	ND	1.9	10		mg/L	20	8/9/2018 11:20:45 PM	A53348			
Sulfate	3000	21	50		mg/L	100	8/21/2018 4:05:59 AM	R53555			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000085	0.000038	0.00020	J	mg/L	1	8/31/2018 10:55:16 AM	40077			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000072	0.000038	0.00020	Filtered	J mg/L	1	8/31/2018 10:57:28 AM	40077			
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: pmf				
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 6:23:48 PM	B53717			
Barium	0.010	0.00049	0.020	J	mg/L	1	8/22/2018 5:25:27 PM	B53642			
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:25:27 PM	B53642			
Calcium	480	0.15	5.0		mg/L	5	8/22/2018 6:19:40 PM	B53642			
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:25:27 PM	B53642			
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:25:27 PM	B53642			
Iron	0.029	0.010	0.020		mg/L	1	8/22/2018 5:25:27 PM	B53642			
Lead	ND	0.0050	0.0050		mg/L	1	8/22/2018 5:25:27 PM	B53642			
Magnesium	58	0.011	1.0		mg/L	1	8/22/2018 5:25:27 PM	B53642			
Manganese	0.68	0.00015	0.0020		mg/L	1	8/22/2018 5:25:27 PM	B53642			
Potassium	7.2	0.075	1.0		mg/L	1	8/22/2018 5:25:27 PM	B53642			
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 5:51:11 PM	B53717			
Silver	0.014	0.0010	0.0050		mg/L	1	8/22/2018 5:25:27 PM	B53642			
Sodium	850	2.6	10		mg/L	10	8/22/2018 6:21:30 PM	B53642			
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 5:51:11 PM	B53717			
Zinc	ND	0.020	0.020		mg/L	1	8/22/2018 5:25:27 PM	B53642			
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: pmf				
Arsenic	ND	0.011	0.020		mg/L	1	8/13/2018 4:53:52 PM	39719			
Barium	0.068	0.020	0.020		mg/L	1	8/13/2018 1:42:37 PM	39719			
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 1:42:37 PM	39719			
Chromium	0.0059	0.0011	0.0060	J	mg/L	1	8/13/2018 1:42:37 PM	39719			
Refer to the OC Summary report	and sample h	ogin checklis	t for flag	red OC	- data a <b>n</b> d	nrese	rvation information				

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

**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

Hall Environmental Analysis Laboratory, Inc.

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 29 of 58
- Р Sample pH Not In Range

RL Reporting Detection Limit

Lab Order 1808540

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and RE Lab ID: 1808540-008	Client Sample ID: MW-44nd REFINERYCollection Date: 8/8/2018 1:05:00 PMMatrix: AQUEOUSReceived Date: 8/9/2018 6:50:00 AM							
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 6010B: TOTAL RECOVERABLE ME	TALS						Analyst: <b>pm</b> f	f
Lead	ND	0.0050	0.0050		mg/L	1	8/13/2018 8:58:21 PM	l 39719
Selenium	ND	0.024	0.050		mg/L	1	8/13/2018 1:42:37 PM	39719
Silver	0.013	0.0018	0.0050		mg/L	1	8/13/2018 1:42:37 PM	39719
EPA METHOD 8260B: VOLATILES							Analyst: RA	4
Benzene	ND	0.17	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
Toluene	ND	0.17	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
Methyl tert-butyl ether (MTBE)	1.1	0.32	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
1,2,4-Trimethylbenzene	ND	0.25	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
1,3,5-Trimethylbenzene	ND	0.23	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
1,2-Dichloroethane (EDC)	ND	0.40	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
1,2-Dibromoethane (EDB)	ND	0.23	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
Naphthalene	ND	0.29	2.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
1-Methylnaphthalene	ND	0.34	4.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
2-Methylnaphthalene	ND	0.24	4.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
Acetone	ND	0.79	10		µg/L	1	8/14/2018 4:29:00 PM	R53423
Bromobenzene	ND	0.32	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
Bromodichloromethane	ND	0.28	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
Bromoform	ND	0.32	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
Bromomethane	ND	0.26	3.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
2-Butanone	ND	1.3	10		µg/L	1	8/14/2018 4:29:00 PM	R53423
Carbon disulfide	ND	0.39	10		µg/L	1	8/14/2018 4:29:00 PM	R53423
Carbon Tetrachloride	ND	0.13	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
Chloropenzene	ND	0.29	1.0		µg/∟	1	8/14/2018 4:29:00 PM	R53423
Chloroform	ND	0.16	2.0		µg/∟ ua/l	1	8/14/2018 4:29:00 PM	R53423
Chloromothano		0.40	1.0		µg/∟ ug/l	1	8/14/2018 4.29.00 PM	D52423
2-Chlorotoluene		0.29	1.0		µg/∟ ug/l	1	8/14/2018 4:29:00 PM	P53/23
4-Chlorotoluene	ND	0.40	1.0		µg/∟ ⊔a/l	1	8/14/2018 4:29:00 PM	R53423
cis-1 2-DCE	ND	0.40	1.0		µg/∟ ⊔a/l	1	8/14/2018 4:29:00 PM	R53423
cis-1.3-Dichloropropene	ND	0.30	1.0		µg/⊑ ⊔a/l	1	8/14/2018 4:29:00 PM	R53423
1.2-Dibromo-3-chloropropane	ND	0.47	2.0		µ9/= ua/l	1	8/14/2018 4:29:00 PM	R53423
Dibromochloromethane	ND	0.24	1.0		µ9/= ua/l	1	8/14/2018 4:29:00 PM	R53423
Dibromomethane	ND	0.32	1.0		µa/L	1	8/14/2018 4:29:00 PM	R53423
1,2-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423
1,3-Dichlorobenzene	ND	0.31	1.0		μg/L	1	8/14/2018 4:29:00 PM	R53423
1,4-Dichlorobenzene	ND	0.40	1.0		μg/L	1	8/14/2018 4:29:00 PM	R53423
Dichlorodifluoromethane	ND	1.0	1.0		μg/L	1	8/14/2018 4:29:00 PM	R53423
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	8/14/2018 4:29:00 PM	R53423

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level. D

- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 30 of 58
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

#### **CLIENT:** Andeavor Bloomfield **Client Sample ID: MW-44 Project:** 8-8-18 RCRA WELLS and REFINERY Collection Date: 8/8/2018 1:05:00 PM Lab ID: 1808540-008 Matrix: AQUEOUS Received Date: 8/9/2018 6:50:00 AM Result PQL DF **Date Analyzed** Analyses **MDL Oual Units Batch ID** EPA METHOD 8260B: VOLATILES Analyst: RAA 1,1-Dichloroethene ND 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 0.12 1,2-Dichloropropane ND 0.15 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 ND 0.27 1.0 1,3-Dichloropropane µg/L 1 8/14/2018 4:29:00 PM R53423 ND R53423 2,2-Dichloropropane 0.18 2.0 µg/L 1 8/14/2018 4:29:00 PM ND 1,1-Dichloropropene 0.16 µg/L R53423 1.0 1 8/14/2018 4:29:00 PM Hexachlorobutadiene ND 0.80 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 2-Hexanone ND 0.91 10 µg/L 1 8/14/2018 4:29:00 PM R53423 Isopropylbenzene ND 0.22 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 4-Isopropyltoluene ND 0.24 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 4-Methyl-2-pentanone ND 0.45 10 R53423 µg/L 1 8/14/2018 4:29:00 PM Methylene Chloride ND 0.21 3.0 µg/L 1 8/14/2018 4:29:00 PM R53423 n-Butylbenzene ND 0.25 3.0 µg/L 1 8/14/2018 4:29:00 PM R53423 n-Propylbenzene ND 0.24 1.0 8/14/2018 4:29:00 PM R53423 µg/L 1 ND 0.20 1.0 sec-Butylbenzene µg/L 1 8/14/2018 4:29:00 PM R53423 ND 0.25 Styrene 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 ND tert-Butylbenzene 0.22 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 1,1,1,2-Tetrachloroethane ND 0.25 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 ND 0.33 2.0 1,1,2,2-Tetrachloroethane µg/L 1 8/14/2018 4:29:00 PM R53423 Tetrachloroethene (PCE) ND 0.15 1.0 8/14/2018 4:29:00 PM R53423 µg/L 1 trans-1,2-DCE ND 0.18 1.0 µg/L 8/14/2018 4:29:00 PM R53423 1 ND 0.28 1.0 R53423 trans-1,3-Dichloropropene µg/L 1 8/14/2018 4:29:00 PM 1,2,3-Trichlorobenzene ND 0.28 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 ND 0.27 1.0 R53423 1,2,4-Trichlorobenzene µg/L 1 8/14/2018 4:29:00 PM ND 0.15 8/14/2018 4:29:00 PM R53423 1,1,1-Trichloroethane 1.0 µg/L 1 ND 0.23 1,1,2-Trichloroethane 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 ND 0.26 Trichloroethene (TCE) 1.0 µg/L 1 8/14/2018 4:29:00 PM R53423 Trichlorofluoromethane ND 0.17 µg/L 8/14/2018 4:29:00 PM R53423 1.0 1 1,2,3-Trichloropropane ND 0.57 2.0 µg/L 1 8/14/2018 4:29:00 PM R53423 ND 0.11 R53423 Vinyl chloride 1.0 µg/L 1 8/14/2018 4:29:00 PM Xylenes, Total ND 0.64 1.5 µg/L 8/14/2018 4:29:00 PM R53423 1 Surr: 1,2-Dichloroethane-d4 105 0 70-130 %Rec 1 8/14/2018 4:29:00 PM R53423 Surr: 4-Bromofluorobenzene 102 0 70-130 %Rec 1 8/14/2018 4:29:00 PM R53423 Surr: Dibromofluoromethane 106 0 70-130 %Rec 1 8/14/2018 4:29:00 PM R53423 Surr: Toluene-d8 92.6 ٥ 70-130 %Rec 8/14/2018 4:29:00 PM R53423 1 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: AG Gasoline Range Organics (GRO) 8/10/2018 7:44:13 PM 0.026 0.0097 0.050 J mg/L 1 A53346 Surr: BFB 102 0 70-130 %Rec 8/10/2018 7:44:13 PM A53346 1 **CARBON DIOXIDE** Analyst: JRR

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

**Oualifiers:** \* Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank В

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix Е Value above quantitation range

J Analyte detected below quantitation limits Page 31 of 58

Р Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

Analytical Report Lab Order 1808540

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Project:	Andeavor Bloomfield 8-8-18 RCRA WELLS and REF	FINERY Collection Date: 8/8/2018 1:05:00 PM							
Lab ID:	1808540-008	Matrix: A	<b>x:</b> AQUEOUS <b>Received Date:</b> 8/9/2018 6:50:00 AM					6:50:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON	DIOXIDE							Analyst: <b>JR</b>	R
Total Carb	oon Dioxide	350	0	1.0	н	mg CO2/	1	8/16/2018 5:15:47 PM	M R53511
SM2320B:								Analyst: JR	R
Bicarbona	te (As CaCO3)	373.5	20.00	20.00		mg/L Ca	1	8/16/2018 5:15:47 PM	N R53511
Carbonate	e (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	8/16/2018 5:15:47 PM	A R53511
Total Alka	linity (as CaCO3)	373.5	20.00	20.00		mg/L Ca	1	8/16/2018 5:15:47 PM	A R53511

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
- PQL Practical Quanitative Limit
- 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 Page 32 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and RE Lab ID: 1808540-009	Client Sample ID: DUPLICATE #2Cellection Date: 8/8/2018Matrix: AQUEOUSReceived Date: 8/9/2018 6:50:00 AM							
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed H	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm	
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/13/2018 8:14:22 PM	39725
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/13/2018 8:14:22 PM	39725
Surr: DNOP	107	0	76.6-135		%Rec	1	8/13/2018 8:14:22 PM	39725
EPA METHOD 300.0: ANIONS							Analyst: MRA	
Fluoride	ND	0.15	0.50		mg/L	5	8/21/2018 4:18:24 AM	R53555
Chloride	820	1.5	25		mg/L	50	8/21/2018 4:30:49 AM	R53555
Nitrogen, Nitrite (As N)	ND	0.96	2.0		mg/L	20	8/9/2018 11:46:28 PM	A53348
Bromide	3.4	0.54	2.0		mg/L	20	8/9/2018 11:46:28 PM	A53348
Nitrogen, Nitrate (As N)	51	0.13	2.0	*	mg/L	20	8/9/2018 11:46:28 PM	A53348
Phosphorus, Orthophosphate (As P)	5.6	1.9	10	J	mg/L	20	8/9/2018 11:46:28 PM	A53348
Sulfate	1500	10	25		mg/L	50	8/21/2018 4:30:49 AM	R53555
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.00013	0.000038	0.00020	J	mg/L	1	8/31/2018 10:59:42 AN	40077
EPA METHOD 7470: MERCURY							Analyst: rde	
Mercury	0.000072	0.000038	0.00020	Filtered	J mg/L	1	8/31/2018 11:01:54 AN	40077
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: pmf	
Arsenic	ND	0.020	0.020		ma/L	1	8/27/2018 6:25:50 PM	B53717
Barium	0.011	0.00049	0.020	J	mg/L	1	8/22/2018 5:32:55 PM	B53642
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:32:55 PM	B53642
Calcium	440	0.15	5.0		mg/L	5	8/22/2018 6:23:20 PM	B53642
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:32:55 PM	B53642
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:32:55 PM	B53642
Iron	0.031	0.010	0.020		mg/L	1	8/22/2018 5:32:55 PM	B53642
Lead	ND	0.0050	0.0050		mg/L	1	8/22/2018 5:32:55 PM	B53642
Magnesium	68	0.011	1.0		mg/L	1	8/22/2018 5:32:55 PM	B53642
Manganese	0.0012	0.00015	0.0020	J	mg/L	1	8/22/2018 5:32:55 PM	B53642
Potassium	4.6	0.075	1.0		mg/L	1	8/22/2018 5:32:55 PM	B53642
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 5:53:13 PM	B53717
Silver	0.013	0.0010	0.0050		mg/L	1	8/22/2018 5:32:55 PM	B53642
Sodium	740	2.6	10		mg/L	10	8/22/2018 6:25:10 PM	B53642
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 5:53:13 PM	B53717
Zinc	ND	0.020	0.020		mg/L	1	8/22/2018 5:32:55 PM	B53642
EPA 6010B: TOTAL RECOVERABLE MET	TALS						Analyst: pmf	
Arsenic	ND	0.011	0.020		mg/L	1	8/13/2018 4:55:19 PM	39719
Barium	0.22	0.020	0.020		mg/L	1	8/13/2018 1:51:15 PM	39719
Cadmium	ND	0.00099	0.0020		mg/L	1	8/13/2018 1:51:15 PM	39719
Chromium	0.0086	0.0011	0.0060		mg/L	1	8/13/2018 1:51:15 PM	39719
Refer to the QC Summary report a	and sample 1	ogin checklis	st for flag	ged QC	data and	prese	rvation information.	

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

PQL Practical Quanitative Limit

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 Page 33 of 58

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and REI Lab ID: 1808540-009	and REFINERY Collection Date: 8/8/2018 Matrix: AQUEOUS Received Date: 8/9/2018 6:50:00 AM							
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 6010B: TOTAL RECOVERABLE MET	ALS						Analyst: pm	f
Lead	ND	0.0050	0.0050		mg/L	1	8/13/2018 8:59:48 PM	1 39719
Selenium	ND	0.024	0.050		mg/L	1	8/13/2018 1:51:15 PM	1 39719
Silver	0.010	0.0018	0.0050		mg/L	1	8/13/2018 1:51:15 PM	1 39719
EPA METHOD 8260B: VOLATILES							Analyst: RA	A
Benzene	ND	0.17	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
Toluene	ND	0.17	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
1,2,4-Trimethylbenzene	ND	0.25	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,3,5-Trimethylbenzene	ND	0.23	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,2-Dichloroethane (EDC)	ND	0.40	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
1,2-Dibromoethane (EDB)	ND	0.23	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Naphthalene	ND	0.29	2.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
1-Methylnaphthalene	ND	0.34	4.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
	ND	0.24	4.0		µg/∟	1	8/14/2018 4:54:00 PM	I R53423
Acelone		0.79	10		µg/L	1	0/14/2010 4.54.00 PM	I R03423
Bromodichloromothana		0.32	1.0		µg/∟ ug/l	1	8/14/2018 4:54:00 PM	I D52423
Bromoform		0.20	1.0		µg/L ug/l	1	8/14/2018 4:54:00 PM	R53423
Bromomethane	ND	0.32	3.0		μg/L μα/Ι	1	8/14/2018 4:54:00 PM	R53423
2-Butanone	ND	1.3	10		µg/⊏ ua/l	1	8/14/2018 4:54:00 PM	R53423
Carbon disulfide	ND	0.39	10		µg/= µa/L	1	8/14/2018 4:54:00 PM	R53423
Carbon Tetrachloride	ND	0.13	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Chlorobenzene	ND	0.29	1.0		μg/L	1	8/14/2018 4:54:00 PM	I R53423
Chloroethane	ND	0.16	2.0		μg/L	1	8/14/2018 4:54:00 PM	I R53423
Chloroform	ND	0.40	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Chloromethane	ND	0.29	3.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
4-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
cis-1,2-DCE	ND	0.38	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
cis-1,3-Dichloropropene	ND	0.30	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,2-Dibromo-3-chloropropane	ND	0.47	2.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Dibromochloromethane	ND	0.24	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
Dibromomethane	ND	0.32	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
1,2-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
1,3-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,4-Dichlorobenzene	ND	0.40	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
Dicniorodifiuoromethane	ND	1.0	1.0		µg/L	1	8/14/2018 4:54:00 PM	I R53423
ו, ו-UICNIOrOetnane	ND	0.40	1.0		µg/∟	1	8/14/2018 4:54:00 PM	K53423

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

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 Page 34 of 58

P Sample pH Not In Range

RL Reporting Detection Limit

Lab Order 1808540

#### Date Reported: 9/5/2018

CLIENT:	Andeavor Bloomfield			Client	Sample	e <b>ID:</b> DI	JPLIC	ATE #2	
Project:	8-8-18 RCRA WELLS and REF	EFINERY Collection Date: 8/8/2018							
Lab ID:	1808540-009	Matrix:	AQUEOUS	Rec	eived I	<b>Date:</b> 8/9	0/2018	6:50:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	atch ID
	OD 8260B: VOLATILES							Analyst: RAA	
1,1-Dichlo	roethene	ND	0.12	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,2-Dichlo	ropropane	ND	0.15	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,3-Dichlo	ropropane	ND	0.27	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
2,2-Dichlo	ropropane	ND	0.18	2.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,1-Dichlo	ropropene	ND	0.16	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Hexachlor	obutadiene	ND	0.80	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
2-Hexanor	ne	ND	0.91	10		µg/L	1	8/14/2018 4:54:00 PM	R53423
Isopropylb	enzene	ND	0.22	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
4-Isopropy	/Itoluene	ND	0.24	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
4-Methyl-2	2-pentanone	ND	0.45	10		µg/L	1	8/14/2018 4:54:00 PM	R53423
Methylene	Chloride	ND	0.21	3.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
n-Butylber	nzene	ND	0.25	3.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
n-Propylbe	enzene	ND	0.24	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
sec-Butylb	benzene	ND	0.20	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Styrene		ND	0.25	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
tert-Butylb	enzene	ND	0.22	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,1,1,2-Te	trachloroethane	ND	0.25	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,1,2,2-Te	trachloroethane	ND	0.33	2.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Tetrachlor	oethene (PCE)	ND	0.15	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
trans-1,2-I	DCE	ND	0.18	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
trans-1,3-I	Dichloropropene	ND	0.28	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,2,3-Trich	hlorobenzene	ND	0.28	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,2,4-Trich	hlorobenzene	ND	0.27	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,1,1-Trich	hloroethane	ND	0.15	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,1,2-Trich	nloroethane	ND	0.23	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Trichloroe	thene (TCE)	ND	0.26	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Trichlorof	uoromethane	ND	0.17	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
1,2,3-Trich	nloropropane	ND	0.57	2.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Vinyl chlor	ride	ND	0.11	1.0		µg/L	1	8/14/2018 4:54:00 PM	R53423
Xylenes, T	Total	ND	0.64	1.5		µg/L	1	8/14/2018 4:54:00 PM	R53423
Surr: 1,	2-Dichloroethane-d4	105	0	70-130		%Rec	1	8/14/2018 4:54:00 PM	R53423
Surr: 4-	Bromofluorobenzene	103	0	70-130		%Rec	1	8/14/2018 4:54:00 PM	R53423
Surr: Di	bromofluoromethane	105	0	70-130		%Rec	1	8/14/2018 4:54:00 PM	R53423
Surr: To	bluene-d8	92.3	0	70-130		%Rec	1	8/14/2018 4:54:00 PM	R53423
EPA METH	HOD 8015D: GASOLINE RANGE							Analyst: AG	
Gasoline F	Range Organics (GRO)	0.028	0.0097	0.050	J	mg/L	1	8/10/2018 10:25:25 PM	A53346
Surr: Bl	FB	103	0	70-130		%Rec	1	8/10/2018 10:25:25 PM	A53346
CARBON	DIOXIDE							Analyst: JRR	

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

**Qualifiers:** \* Value exceeds Maximum Contaminant Level. В Analyte detected in the associated Method Blank

> D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

Hall Environmental Analysis Laboratory, Inc.

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

Е Value above quantitation range

J Analyte detected below quantitation limits Page 35 of 58

Р Sample pH Not In Range

RL Reporting Detection Limit

Lab Order 1808540

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

<b>CLIENT:</b>	Andeavor Bloomfield	<b>Client Sample ID:</b> DUPLICATE #2							
Project:	8-8-18 RCRA WELLS and REF	EFINERY Collection Date: 8/8/2018							
Lab ID:	1808540-009	Matrix: A	<b>Received Date:</b> 8/9/2018 6:50:00 AM					6:50:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE								Analyst: JR	R
Total Carb	oon Dioxide	260	0	1.0	н	mg CO2	/ 1	8/16/2018 5:32:04 PM	A R53511
SM2320B: ALKALINITY								Analyst: JR	R
Bicarbona	te (As CaCO3)	278.7	20.00	20.00		mg/L Ca	1	8/16/2018 5:32:04 PM	/ R53511
Carbonate	e (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	8/16/2018 5:32:04 PM	A R53511
Total Alka	linity (as CaCO3)	278.7	20.00	20.00		mg/L Ca	1	8/16/2018 5:32:04 PM	/ R53511

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
- PQL Practical Quanitative Limit
- 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 Page 36 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-8-18 RCRA WELLS and REI		Client Sample ID: Trip Blank							
Lab ID: 1808540-010	Matrix: A	QUEOUS	Rec	eived I	<b>Date:</b> 8/9	9/2018	6:50:00 AM		
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID	
EPA METHOD 8260B: VOLATILES							Analyst: RA	A	
Benzene	ND	0.17	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
Toluene	ND	0.17	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
1,2,4-Trimethylbenzene	ND	0.25	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
1,3,5-Trimethylbenzene	ND	0.23	1.0		µg/L	1	8/14/2018 5:19:00 PN	1 R53423	
1,2-Dichloroethane (EDC)	ND	0.40	1.0		µg/L	1	8/14/2018 5:19:00 PN	1 R53423	
1,2-Dibromoethane (EDB)	ND	0.23	1.0		µg/L	1	8/14/2018 5:19:00 PN	1 R53423	
Naphthalene	ND	0.29	2.0		µg/∟	1	8/14/2018 5:19:00 PN	1 R53423	
1-Methylnaphthalene		0.34	4.0		µg/∟ ug/l	1	8/14/2018 5:19:00 PN	1 R03423	
		0.24	4.0		µg/∟ ug/l	1	0/14/2010 5.19.00 PM	1 R00420	
Bromohenzene		0.79	10		µg/∟ ug/l	1	8/14/2018 5:19:00 PM	1 R53423	
Bromodichloromethane	ND	0.32	1.0		µg/∟ ⊔a/l	1	8/14/2018 5:19:00 PM	1 R53423	
Bromoform	ND	0.20	1.0		µg/⊑ ⊔a/l	1	8/14/2018 5:19:00 PM	1 R53423	
Bromomethane	ND	0.26	3.0		µg/= µa/L	1	8/14/2018 5:19:00 PM	1 R53423	
2-Butanone	ND	1.3	10		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
Carbon disulfide	ND	0.39	10		μg/L	1	8/14/2018 5:19:00 PM	1 R53423	
Carbon Tetrachloride	ND	0.13	1.0		μg/L	1	8/14/2018 5:19:00 PM	1 R53423	
Chlorobenzene	ND	0.29	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
Chloroethane	ND	0.16	2.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
Chloroform	ND	0.40	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
Chloromethane	ND	0.29	3.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
4-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
cis-1,2-DCE	ND	0.38	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
cis-1,3-Dichloropropene	ND	0.30	1.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
1,2-Dibromo-3-chloropropane	ND	0.47	2.0		µg/L	1	8/14/2018 5:19:00 PM	1 R53423	
Dibromochloromethane	ND	0.24	1.0		µg/L	1	8/14/2018 5:19:00 PN	1 R53423	
Dibromomethane	ND	0.32	1.0		µg/L	1	8/14/2018 5:19:00 PN	1 R53423	
1,2-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/14/2018 5:19:00 PN	1 R53423	
1,3-Dichlorobenzene	ND	0.31	1.0		µg/∟	1	8/14/2018 5:19:00 PN	1 R53423	
1,4-Dichlorodelizene		0.40	1.0		µg/∟ ug/l	1	0/14/2010 5.19.00 PN	1 R00423	
1 1 Dichleroothana		0.40	1.0		µg/∟ ug/l	1	0/14/2010 5.19.00 PM	1 R00420	
1 1-Dichloroethene		0.40	1.0		μg/L μα/Ι	1	8/14/2018 5.10.00 PN	R53423	
1 2-Dichloropropane		0.12	1.0		µg/⊏ ⊔a/l	1	8/14/2018 5·10·00 PM	R53423	
1.3-Dichloropropane	ND	0.27	1.0		µ9/⊏ ⊔a/l	1	8/14/2018 5:19:00 PM	1 R53423	
2.2-Dichloropropane	ND	0.18	2.0		r,a,∟ na∖l	1	8/14/2018 5:19:00 PM	1 R53423	
_,		0.10			~ <del>.</del> .	•			

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 37 of 58
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
Lab Order 1808540

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield <b>Project:</b> 8-8-18 RCRA WELLS and REF	FINERY Collection Date: Matering AQUEQUS Baseined Date: 8/0/2018 (.50:00 AM							
Lab ID: 1808540-010	Matrix: A	QUEOUS	Rec	eived I	<b>Date:</b> 8/9	0/2018	6:50:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID
EPA METHOD 8260B: VOLATILES							Analyst: RAA	
1,1-Dichloropropene	ND	0.16	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
Hexachlorobutadiene	ND	0.80	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
2-Hexanone	ND	0.91	10		µg/L	1	8/14/2018 5:19:00 PM	R53423
Isopropylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
4-Isopropyltoluene	ND	0.24	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
4-Methyl-2-pentanone	ND	0.45	10		µg/L	1	8/14/2018 5:19:00 PM	R53423
Methylene Chloride	ND	0.21	3.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
n-Butylbenzene	ND	0.25	3.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
n-Propylbenzene	ND	0.24	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
sec-Butylbenzene	ND	0.20	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
Styrene	ND	0.25	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
tert-Butylbenzene	ND	0.22	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
1,1,1,2-Tetrachloroethane	ND	0.25	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
1,1,2,2-Tetrachloroethane	ND	0.33	2.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
trans-1,2-DCE	ND	0.18	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
trans-1,3-Dichloropropene	ND	0.28	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
1,2,3-Trichlorobenzene	ND	0.28	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
1,2,4-Trichlorobenzene	ND	0.27	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
1,1,1-Trichloroethane	ND	0.15	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
1,1,2-Trichloroethane	ND	0.23	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
Trichloroethene (TCE)	ND	0.26	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
Trichlorofluoromethane	ND	0.17	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
1,2,3-Trichloropropane	ND	0.57	2.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
Vinyl chloride	ND	0.11	1.0		µg/L	1	8/14/2018 5:19:00 PM	R53423
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/14/2018 5:19:00 PM	R53423
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	8/14/2018 5:19:00 PM	R53423
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	8/14/2018 5:19:00 PM	R53423
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	8/14/2018 5:19:00 PM	R53423
Surr: Toluene-d8	91.5	0	70-130		%Rec	1	8/14/2018 5:19:00 PM	R53423
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	0.038	0.0097	0.050	J	mg/L	1	8/10/2018 10:48:27 PM	A53346
Surr: BFB	107	0	70-130		%Rec	1	8/10/2018 10:48:27 PM	A53346

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Bl	ank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 38 of 58
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	1 460 50 01 50
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit a	s specified

### Hall Environmental Analysis Laboratory, Inc.

Hall Environm	nental A	nal	ysis I	Laborat	ory, Inc.					WO#:	1808540 05-Sep-18
Client: An Project: 8-8	deavor Blo 3-18 RCRA	omfie WEL	ld LS and	REFINE	RY WELL						
Sample ID MB	S	SampT	ype: <b>m</b> l	olk	Tes	tCode: E	PA Method	300.0: Anion	6		
Client ID: PBW		Batch	n ID: R5	3348	F	RunNo: 5	3348				
Prep Date:	Ana	lysis D	ate: 8/	9/2018	S	SeqNo: 1	756567	Units: mg/L			
Analyte	Re	sult	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 C	).26	0.50								J
Sample ID LCS	S	SampT	ype: Ics	5	Tes	tCode: E	PA Method	300.0: Anion	6		
Client ID: LCSW		Batch	n ID: R5	3348	F	RunNo: 5	3348				
Prep Date:	Ana	lysis D	ate: 8/	9/2018	S	SeqNo: 1	756568	Units: mg/L			
Analyte	Re	sult	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	(	).53	0.10	0.5000	0	105	90	110			
Chloride		4.7	0.50	5.000	0	93.5	90	110			
Nitrogen, Nitrite (As N)	(	).97	0.10	1.000	0	97.3	90	110			
Bromide		2.4	0.10	2.500	0	95.8	90	110			
Nitrogen, Nitrate (As N)		2.4	0.10	2.500	0	95.5	90	110			
Phosphorus, Orthophosphate	(As P	4.7	0.50	5.000	0	94.8	90	110			
Sample ID MB	S	SampT	ype: <b>m</b> l	olk	Tes	tCode: E	PA Method	300.0: Anion	6		
Client ID: PBW		Batch	n ID: A5	3348	F	RunNo: 5	53348				
Prep Date:	Ana	lysis D	ate: 8/	9/2018	S	SeqNo: 1	756619	Units: <b>mg/L</b>			
Analyte	Re	sult	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	(	).18	0.50								J
Nitrogen, Nitrite (As N)		ND	0.10								
Bromide		ND	0.10								
Nitrogen, Nitrate (As N)		ND	0.10								
Phosphorus, Orthophosphate	(As P C	).26	0.50								J
Sulfate		ND	0.50								
Sample ID LCS	S	SampT	ype: Ics	5	Tes	tCode: E	PA Method	300.0: Anion	5		
Client ID: LCSW		Batch	n ID: A5	3348	F	RunNo: 5	53348				
Prep Date:	Ana	lysis D	ate: 8/	9/2018	Ş	SeqNo: 1	756620	Units: mg/L			
Analyte	Re	sult	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		4.7	0.50	5.000	0	93.3	90	110			
Nitrogen, Nitrite (As N)	(	0.97	0.10	1.000	0	97.0	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	95.3	90	110			

#### **Qualifiers:**

Nitrogen, Nitrate (As N)

\* Value exceeds Maximum Contaminant Level.

**OC SUMMARY REPORT** 

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank

Е Value above quantitation range

- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Page 39 of 58

WO#:	1808540

Client: Project:	Ande 8-8-1	eavor Bloomfie 8 RCRA WEI	eld LLS and	I REFINER	RY WELL						
Sample ID	LCS	SampT	Type: Ics	6	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID:	LCSW	Batch	h ID: <b>A5</b>	3348	F	RunNo: 5	3348				
Prep Date:		Analysis D	Date: 8/	/9/2018	S	SeqNo: 1	756620	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, C	Orthophosphate (A	s P 4.9	0.50	5.000	0	97.3	90	110			
Sulfate		9.2	0.50	10.00	0	91.8	90	110			
Sample ID	MB	SampT	Type: <b>ml</b>	blk	Tes	tCode: El	PA Method	300.0: Anions	S		
Client ID:	PBW	Batch	Batch ID: <b>R53555</b> RunNo: <b>53555</b>								
Prep Date:		Analysis D	Date: 8/	/20/2018	S	SeqNo: 1	766371	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		ND	0.10								
Chloride		0.14	0.50								J
Sulfate		ND	0.50								
Sample ID	LCS	SampT	Type: Ics	6	Tes	tCode: El	PA Method	300.0: Anions	S		
Client ID:	LCSW	Batch	h ID: R5	3555	F	RunNo: 5	3555				
Prep Date:		Analysis D	Date: 8/	/20/2018	S	SeqNo: 1	766372	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		0.47	0.10	0.5000	0	94.3	90	110			
Chloride		4.7	0.50	5.000	0	93.1	90	110			
Sulfate		9.2	0.50	10.00	0	92.0	90	110			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 40 of 58

0.57

Client:AndeavProject:8-8-18 J	or Bloomfie RCRA WEI	eld LLS and	I REFINER	RY WELL						
Sample ID LCS-39725	SampT	ype: LC	cs	Tes	tCode: El	PA Method	8015D: Diese	l Range		
Client ID: LCSW	Batch	h ID: 39	725	F	RunNo: 5	3384				
Prep Date: 8/10/2018	Analysis D	Date: 8	/13/2018	S	SeqNo: 1	759066	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.1	0.40	2.500	0	83.4	76.5	158			
Surr: DNOP	0.20		0.2500		81.4	76.6	135			
Sample ID MB-39725	SampT	ype: <b>M</b> I	BLK	Tes	tCode: El	PA Method	8015D: Diese	l Range		
Client ID: PBW	Batch	h ID: 39	725	F	RunNo: 5	3384				
Prep Date: 8/10/2018	Analysis D	Date: 8	/13/2018	S	SeqNo: 1	759067	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.40								
Motor Oil Range Organics (MRO)	ND	2.5								

114

76.6

135

0.5000

#### **Qualifiers:**

Surr: DNOP

- Value exceeds Maximum Contaminant Level. \*
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Page 41 of 58

WO#: 1808540

05-Sep-18

Client: Ande	avor Bloomfie	eld								
Project: 8-8-1	8 RCRA WEL	LLS and	REFINER	KY WELL						
Sample ID 100ng Ics	SampT	ype: LC	S	Tes	stCode: E	PA Method	8260B: VOL	ATILES		
Client ID: LCSW	Batch	n ID: <b>R5</b>	3391	F	RunNo: 5	3391				
Prep Date:	Analysis D	0ate: <b>8/</b>	13/2018	:	SeqNo: 1	759339	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Toluene	20	1.0	20.00	0	99.6	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	111	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.3		10.00		92.8	70	130			
Sample ID rb	SampT	ype: ME	BLK	Tes	stCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	n ID: <b>R5</b>	3391	F	RunNo: 5	3391				
Prep Date:	Analysis D	0ate: <b>8/</b>	13/2018	:	SeqNo: 1	759340	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	0.41	10								J
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. \*
- Sample Diluted Due to Matrix D
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit PQL
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH Not In Range Р
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 42 of 58

Client: Project:	Andeavor Bloomfie 8-8-18 RCRA WEI	eld LLS and	REFINE	RY WELL						
Sample ID rb	Samp	Туре: МЕ	BLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batc	h ID: <b>R5</b>	3391	F	RunNo: 5	3391				
Prep Date:	Analysis [	Date: 8/	13/2018	5	SeqNo: 1	759340	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-chloroprop	ane 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
- PQL Practical Quanitative Limit
- 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

Page 43 of 58

WO#: **1808540** 

Client:AnProject:8-8	deavor Bloomfi -18 RCRA WE	eld LLS and	REFINE	RY WELL						
Sample ID rb	Samp	Туре: МЕ	BLK	Tes	stCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batc	h ID: <b>R5</b>	3391	F	RunNo: 5	3391				
Prep Date:	Analysis [	Date: <b>8/</b>	13/2018	:	SeqNo: 1	759340	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	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzen	e 10		10.00		102	70	130			
Surr: Dibromofluoromethan	e 10		10.00		100	70	130			
Surr: Toluene-d8	9.4		10.00		93.7	70	130			
Sample ID 100ng Ics	Samp	Type: LC	s	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: LCSW	Batc	h ID: <b>R5</b>	3423	F	RunNo: <b>5</b>	3423				
Prep Date:	Analysis I	Date: <b>8/</b>	14/2018	:	SeqNo: 1	759990	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			•
Toluene	19	1.0	20.00	0	94.9	70	130			
Chlorobenzene	19	1.0	20.00	0	96.8	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	113	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzen	e 10		10.00		103	70	130			
Surr: Dibromofluoromethan	e 10		10.00		105	70	130			
Surr: Toluene-d8	9.2		10.00		91.5	70	130			
Sample ID RB	Samp	Type: ME	BLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batc	h ID: <b>R5</b>	3423	F	RunNo: <b>5</b>	3423				
Prep Date:	Analysis [	Date: <b>8/</b>	14/2018	:	SeqNo: 1	760004	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								

#### **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
- PQL Practical Quanitative Limit
- 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

Page 44 of 58

Client:AndeaProject:8-8-18	vor Bloomfie RCRA WEL	ld LS and	REFINE	RY WELL							
Sample ID RB	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES			
Client ID: PBW	Batch	ID: <b>R5</b>	3423	F	RunNo: 5	3423					
Prep Date:	Analysis D	ate: 8/	14/2018	S	SeqNo: 1	760004	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-Dichloronronane	ND	1.0									
1.3-Dichloropropane		1.0									
2 2-Dichloropropane		2.0									
1 1-Dichloropropane		1.0									
Hevachlorobutadiene		1.0									
		1.0									
sonronylhonzono		10									
A Isopropyltoluopo		1.0									
4 Motbyl 2 pontanono	15	1.0									
Mathylana Chlorida	1.5 ND	20								5	
n Rutulbonzono		3.0									
n-Dutyibenzene Dropyibenzene		3.0									
		1.0									
sec-bulyibenzene		1.0									
Siyiene		1.0									
iert-Butylbenzene	ND	1.0									
1, 1, 1, 2-1 etrachioroethane	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
- PQL Practical Quanitative Limit
- 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

Page 45 of 58

# Client:Andeavor BloomfieldProject:8-8-18 RCRA WELLS and REFINERY WELL

Sample ID RB	SampType: MBLK			Tes	tCode: El	ATILES				
Client ID: PBW	Batch	n ID: <b>R5</b>	3423	F	RunNo: 5	3423				
Prep Date:	Analysis D	ate: 8/	14/2018	S	SeqNo: 1	760004	Units: µg/L			
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	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.0		10.00		89.6	70	130			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 46 of 58

05-Sep-18

Client: Andea	vor Bloomfie	eld IS and	PEEINEL	V WELL							
<b>110jeet.</b> 0-0-10	KCRA WEI			(I WEEE							
Sample ID mb-39765	SampT	Type: ME	BLK	Tes	tCode: E	PA Method	8270C: Semi	volatiles			
Client ID: PBW	Batch	h ID: 39	765	F	RunNo: 5	3436					
Prep Date: 8/14/2018	Analysis D	Date: 8/	14/2018	Ş	SeqNo: 1	759987	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	8.0	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	ND	10									
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	ND	10									
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									

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 47 of 58

Client: A	Andeavor Bloomfield								
Project: 8	-8-18 KCKA WELL	S and KEFINE	XI WELL						
Sample ID mb-3976	5 SampTyp	e: MBLK	Tes	tCode: E	PA Method	8270C: Semiv	olatiles		
Client ID: PBW	Batch I	D: <b>39765</b>	F	RunNo: 5	3436				
Prep Date: 8/14/201	8 Analysis Dat	e: <b>8/14/2018</b>	S	SeqNo: 1	759987	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	95	200.0		47.3	15	74.1			
Surr: Phenol-d5	75	200.0		37.4	15	59.8			
Surr: 2,4,6-Tribromopher	iol 120	200.0		59.6	22.1	112			
Surr: Nitrobenzene-d5	66	100.0		65.9	33.2	94			
Surr: 2-Fluorobiphenyl	62	100.0		61.8	34	90.9			
Surr: 4-Terphenyl-d14	73	100.0		73.0	15	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
- PQL Practical Quanitative Limit
- 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

Page 48 of 58

### Client:

Project: 8-8-18 RCRA WELLS and REFINERY WELL

Andeavor Bloomfield

Sample ID Ics-39765	SampType: LCS TestCode: EPA Method 8270C: Semivolatiles									
Client ID: LCSW	Batch	n ID: 39	765	R	anNo: 5	3467				
Prep Date: 8/14/2018	Analysis D	0ate: <b>8/</b>	15/2018	S	SeqNo: 1	761612	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	63	10	100.0	0	62.6	55.1	104			
4-Chloro-3-methylphenol	140	10	200.0	0	71.7	57	115			
2-Chlorophenol	130	10	200.0	0	62.5	43.4	112			
1,4-Dichlorobenzene	54	10	100.0	0	54.3	38	95.2			
2,4-Dinitrotoluene	56	10	100.0	0	56.5	55.1	96.7			
N-Nitrosodi-n-propylamine	78	10	100.0	0	78.2	55	112			
4-Nitrophenol	83	10	200.0	0	41.4	16.6	93			
Pentachlorophenol	120	20	200.0	0	60.4	43.2	104			
Phenol	73	10	200.0	0	36.6	21.3	85.7			
Pyrene	66	10	100.0	0	65.8	64.9	105			
1,2,4-Trichlorobenzene	62	10	100.0	0	62.0	42.6	107			
Surr: 2-Fluorophenol	89		200.0		44.5	15	74.1			
Surr: Phenol-d5	80		200.0		39.8	15	59.8			
Surr: 2,4,6-Tribromophenol	130		200.0		63.0	22.1	112			
Surr: Nitrobenzene-d5	66		100.0		66.0	33.2	94			
Surr: 2-Fluorobiphenyl	63		100.0		63.4	34	90.9			
Surr: 4-Terphenyl-d14	67		100.0		67.4	15	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
- PQL Practical Quanitative Limit
- 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

Page 49 of 58

Client: Project:	Andeavo 8-8-18 R	r Bloomfield CRA WELLS	and REFINE	RY WELL						
Sample ID	MB-40077	SampType	MBLK	Tes	Code: EPA M	lethod 74	70: Mercury	/		
Client ID:	PBW	Batch ID:	40077	R	unNo: <b>53851</b>					
Prep Date:	8/30/2018	Analysis Date:	8/31/2018	S	eqNo: 17769	<b>38</b> U	Inits: <b>mg/L</b>			
Analyte		Result P	QL SPK value	SPK Ref Val	%REC Lov	wLimit I	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.000048 0.00	020							J
Sample ID	LCS-40077	SampType	LCS	Tes	Code: EPA M	lethod 74	70: Mercury	/		
Client ID:	LCSW	Batch ID:	40077	R	unNo: <b>53851</b>					
Prep Date:	8/30/2018	Analysis Date:	8/31/2018	S	eqNo: 17769	<b>39</b> U	Inits: <b>mg/L</b>			
Analyte		Result P	QL SPK value	SPK Ref Val	%REC Lov	wLimit I	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0049 0.00	0.005000	0	97.6	80	120			
Sample ID	1808540-001DMS	SampType	MS	Tes	Code: EPA M	lethod 74	70: Mercury	/		
Client ID:	MW-64	Batch ID:	40077	R	unNo: <b>53851</b>					
Prep Date:	8/30/2018	Analysis Date:	8/31/2018	S	eqNo: 17769	<b>41</b> U	Inits: <b>mg/L</b>			
Analyte		Result P	QL SPK value	SPK Ref Val	%REC Lov	wLimit I	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0050 0.00	0.005000	0.0001239	97.7	75	125			
Sample ID	1808540-001DMS	D SampType	MSD	Tes	Code: EPA M	lethod 74	70: Mercury	/		
Client ID:	MW-64	Batch ID:	40077	R	unNo: <b>53851</b>					
Prep Date:	8/30/2018	Analysis Date:	8/31/2018	S	eqNo: 17769	<b>42</b> U	Inits: <b>mg/L</b>			
Analyte		Result P	QL SPK value	SPK Ref Val	%REC Lov	wLimit I	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0050 0.00	0.005000	0.0001239	97.8	75	125	0.105	20	

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 50 of 58

WO#: **1808540** 

Client: Project:		Andeavor Bloomf 8-8-18 RCRA WE	ield LLS and	REFINER	RY WELL						
Sample ID	MB-B	Samp	Type: ME	BLK	Tes	stCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Bate	ch ID: <b>B5</b>	3642	F	RunNo: 5	3642				
Prep Date:		Analysis	Date: 8/	22/2018	:	SeqNo: 1	769047	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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		0.10	1.0								J
Silver		ND	0.0050								
Sodium		0.29	1.0								J
Zinc		ND	0.020								
Sample ID	LCS-B	Samp	Type: LC	S	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Bate	ch ID: B5	3642	F	RunNo: 5	3642				
Prep Date:		Analysis	Date: 8/	22/2018	:	SeqNo: 1	769049	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.52	0.020	0.5000	0	104	80	120			
Cadmium		0.52	0.0020	0.5000	0	105	80	120			
Calcium		49	1.0	50.00	0	98.1	80	120			
Chromium		0.49	0.0060	0.5000	0	98.2	80	120			
Copper		0.50	0.0060	0.5000	0	99.5	80	120			
Iron		0.51	0.020	0.5000	0	103	80	120			
Lead		0.50	0.0050	0.5000	0	99.9	80	120			
Magnesium		50	1.0	50.00	0	100	80	120			
Manganese		0.49	0.0020	0.5000	0	98.7	80	120			
Potassium		50	1.0	50.00	0	99.5	80	120			
Silver		0.11	0.0050	0.1000	0	111	80	120			
Sodium		51	1.0	50.00	0	103	80	120			
Zinc		0.48	0.020	0.5000	0	95.9	80	120			
Sample ID	MB-B	Samp	Туре: <b>МЕ</b>	BLK	Tes	stCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Bate	ch ID: B5	3717	F	RunNo: 5	3717				
Prep Date:		Analysis	Date: 8/	27/2018	:	SeqNo: 1	772853	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	0.020								
Selenium		ND	0.050								
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
- PQL Practical Quanitative Limit
- 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
- Page 51 of 58

Client: Project:		Andeavor Bloomfield 8-8-18 RCRA WELL	S and	REFINER	Y WELL						
Sample ID	MB-B	SampTyp	e: MB	BLK	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batch II	): <b>B</b> 5	3717	F	RunNo: 5	3717				
Prep Date:		Analysis Date	e: 8/	27/2018	S	SeqNo: 1	772853	Units: mg/L			
Analyte Uranium		Result I ND	PQL 0.10	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sample ID	LCS-B	SampTyp	e: LC	S	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	LCSW	Batch II	): <b>B</b> 5	3717	F	RunNo: 5	3717				
Prep Date:		Analysis Date	e: 8/	27/2018	S	SeqNo: 1	772855	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.49 (	.020	0.5000	0	98.6	80	120			
Selenium		0.49 0	.050	0.5000	0	98.0	80	120			
Uranium		0.51	0.10	0.5000	0	102	80	120			
Sample ID	МВ	SampTyp	e: Me	BLK	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batch II	): <b>A</b> 5	3827	F	RunNo: 5	3827				
Prep Date:		Analysis Date	e: 8/	30/2018	S	SeqNo: 1	776447	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND (	.020					-			
Sample ID	LCS	SampTyp	e: LC	s	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	ls	
Client ID:	LCSW	Batch I	): <b>A</b> 5	3827	F	RunNo: 5	3827				
Prep Date:		Analysis Date	e: 8/	30/2018	S	SeqNo: 1	776449	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.47 (	.020	0.5000	0	93.6	80	120			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 52 of 58

WO#: **1808540** 

Client: Project:	Ande 8-8-1	avor Bloomfield 8 RCRA WELLS	S and	I REFINEF	RY WELL						
Sample ID	MB-39719	SampTyp	e: MI	BLK	Tes	tCode: E	PA 6010B:	Total Recover	able Meta	als	
Client ID:	PBW	Batch II	): <b>39</b>	719	F	RunNo: 5	3393				
Prep Date:	8/10/2018	Analysis Date	e: 8/	/13/2018	S	SeqNo: 1	758346	Units: mg/L			
Analyte		Result I	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		ND (	.020								
Cadmium		ND 0.	0020								
Chromium		ND 0.	0060								
Lead		0.012 0.	0050								
Selenium		ND (	.050								
Silver		ND 0.	0050								
Sample ID	LCS-39719	SampTyp	e: LC	s	Tes	tCode: E	PA 6010B: <sup>-</sup>	Total Recover	able Meta	als	
Client ID:	LCSW	Batch II	): 39	719	F	RunNo: 5	3393				
Prep Date:	8/10/2018	Analysis Date	e: 8/	/13/2018	5	SeqNo: 1	758348	Units: mg/L			
Analyte		Result I	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.50 0	.020	0.5000	0	100	80	120			
Cadmium		0.51 0.	0020	0.5000	0	101	80	120			
Chromium		0.48 0.	0060	0.5000	0	96.1	80	120			
Lead		0.49 0.	0050	0.5000	0	97.9	80	120			В
Selenium		0.49 0	.050	0.5000	0	98.4	80	120			
Silver		0.10 0.	0050	0.1000	0	101	80	120			
Sample ID	MB-39719	SampTyp	e: MI	BLK	Tes	tCode: E	PA 6010B:	Total Recover	able Meta	als	
Client ID:	PBW	Batch II	): <b>39</b>	719	F	RunNo: 5	3393				
Prep Date:	8/10/2018	Analysis Date	e: 8/	/13/2018	S	SeqNo: 1	758434	Units: mg/L			
Analyte		Result I	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND (	.020								
Sample ID	LCS-39719	SampTyp	e: LC	s	Tes	tCode: E	PA 6010B:	Total Recover	able Meta	als	
Client ID:	LCSW	Batch II	): <b>39</b>	719	F	RunNo: 5	3393				
Prep Date:	8/10/2018	Analysis Date	e: 8/	/13/2018	S	SeqNo: 1	758436	Units: mg/L			
Analyte		Result I	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.48 (	.020	0.5000	0	95.1	80	120			
Sample ID	MB-39719	SampTyp	e: MI	BLK	Tes	tCode: E	PA 6010B:	Total Recover	able Meta	als	
Client ID:	PBW	Batch I	): <b>39</b>	719	F	RunNo: 5	3387				
Prep Date:	8/10/2018	Analysis Date	e: 8/	/13/2018	S	SeqNo: 1	759161	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead		ND 0.	0050								

#### **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

PQL Practical Quanitative Limit

- 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

Page 53 of 58

				_	
Project:	8-8-18 RC	CRA WELL	S and REFIN	ERY WELL	
Client:	Andeavor	Bloomfield			

Sample ID LCS-39719	SampType: LCS	TestCode: EPA 601	0B: Total Recoverable Metals
Client ID: LCSW	Batch ID: 39719	RunNo: 53387	
Prep Date: 8/10/2018	Analysis Date: 8/13/201	SeqNo: 1759163	Units: <b>mg/L</b>
Analyte	Result PQL SPK	lue SPK Ref Val %REC LowL	mit HighLimit %RPD RPDLimit Qual
Lead	0.51 0.0050 0.	000 0 101	80 120

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 54 of 58

WO#: **1808540** 

Client:AndeaveProject:8-8-18 H	or Bloomfield RCRA WELLS and REFIN	JERY WELL			
Sample ID <b>1808540-006ams</b> Client ID: <b>MW-65</b> Prep Date:	SampType: MS Batch ID: A53346 Analysis Date: 8/10/2018	Test R S	tCode: <b>EPA Method</b> RunNo: <b>53346</b> SeqNo: <b>1757448</b>	8015D: Gasoline Ran Units: mg/L	ge
Analyte Gasoline Range Organics (GRO) Surr: BFB	Result         PQL         SPK value           55         2.5         25           490         50	Iue         SPK Ref Val           .00         29.15           0.0	%REC         LowLimit           103         63.4           97.0         70	HighLimit %RPD 130 130	RPDLimit Qual
Sample ID 1808540-006ams Client ID: MW-65 Prep Date:	ad SampType: MSD Batch ID: A53346 Analysis Date: 8/10/2018	Test R S	tCode: EPA Method RunNo: 53346 SeqNo: 1757449	8015D: Gasoline Ran Units: mg/L	ge
Analyte Gasoline Range Organics (GRO) Surr: BFB	Result         PQL         SPK value           54         2.5         25           490         50	lue SPK Ref Val .00 29.15 0.0	%REC         LowLimit           101         63.4           98.2         70	HighLimit         %RPD           130         1.03           130         0	RPDLimit Qual 20 0
Sample ID 2.5ug gro Ics Client ID: LCSW Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB	SampType: LCS Batch ID: A53346 Analysis Date: 8/10/2018 Result PQL SPK va 0.52 0.050 0.50 9.8 10	Test R S <u>lue SPK Ref Val</u> 000 0 .00	tCode: EPA Method RunNo: 53346 SeqNo: 1757458 <u>%REC LowLimit</u> 103 70 98.0 70	8015D: Gasoline Ran Units: mg/L HighLimit %RPD 130 130	<b>ge</b> RPDLimit Qual
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date: Analyte	SampType: <b>MBLK</b> Batch ID: <b>A53346</b> Analysis Date: <b>8/10/2018</b> Result PQL SPK va	Test R S lue SPK Ref Val	tCode: <b>EPA Method</b> RunNo: <b>53346</b> SeqNo: <b>1757460</b> %REC LowLimit	8015D: Gasoline Ran Units: mg/L HighLimit %RPD	<b>ge</b> RPDLimit Qual
Gasoline Range Organics (GRO) Surr: BFB	0.025 0.050 10 10	.00	104 70	130	J
Sample ID 2.5ug gro Ics Client ID: LCSW Prep Date:	SampType: LCS Batch ID: B53389 Analysis Date: 8/13/2018	Test R S	tCode: <b>EPA Method</b> RunNo: <b>53389</b> SeqNo: <b>1758838</b>	8015D: Gasoline Ran Units: mg/L	ge
Analyte Gasoline Range Organics (GRO) Surr: BFB	Result         PQL         SPK value           0.52         0.050         0.50           9.5         10	Iue         SPK Ref Val           000         0           .00         0	%REC         LowLimit           104         70           95.5         70	HighLimit %RPD 130 130	RPDLimit Qual
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date: Analyte	SampType: <b>MBLK</b> Batch ID: <b>B53389</b> Analysis Date: <b>8/13/2018</b> Result PQL SPK va	Test R S lue SPK Ref Val	tCode: <b>EPA Method</b> RunNo: <b>53389</b> SeqNo: <b>1758839</b> %REC LowLimit	8015D: Gasoline Ran Units: mg/L HighLimit %RPD	<b>ge</b> RPDLimit Qual

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 55 of 58

11

Client:	Andeavor Bloomfie	vor Bloomfield								
Project:	8-8-18 RCRA WEI	LLS and	REFINE	RY WELL						
Sample ID rb	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBW	Batc	h ID: <b>B5</b>	3389	R	RunNo: 5	3389				
Prep Date:	Analysis [	Date: <b>8/</b>	13/2018	S	SeqNo: 1	758839	Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	(GRO) 0.022	0.050								J

105

70

130

10.00

<b>Oualifiers:</b>
--------------------

Surr: BFB

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 56 of 58

Client: Project:	Andeavo 8-8-18 R	r Bloomfie CRA WEL	ld LS and	REFINE	RY WELL						
Sample ID n	nb-1 alk	SampT	ype: ME	BLK	Tes	tCode: S	M2320B: AI	kalinity			
Client ID: F	PBW	Batch	n ID: <b>R5</b>	3511	F	lunNo: 5	3511				
Prep Date:		Analysis D	ate: 8/	16/2018	S	SeqNo: 1	763637	Units: mg/L	CaCO3		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (a	ns CaCO3)	ND	20.00								
Sample ID	cs-1 alk	SampT	ype: LC	s	Tes	tCode: S	M2320B: AI	kalinity			
Client ID: L	CSW	Batch	n ID: R5	3511	F	aunNo: 5	3511				
Prep Date:		Analysis D	ate: 8/	16/2018	S	SeqNo: 1	763638	Units: mg/L	CaCO3		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (a	is CaCO3)	79.48	20.00	80.00	0	99.4	90	110			
Sample ID n	nb-2 alk	SampT	ype: ME	BLK	Tes	tCode: S	M2320B: AI	kalinity			
Client ID: F	PBW	Batch	n ID: R5	3511	F	aunNo: 5	3511				
Prep Date:		Analysis D	ate: 8/	16/2018	S	SeqNo: 1	763661	Units: mg/L	CaCO3		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (a	is CaCO3)	ND	20.00								
Sample ID	cs-2 alk	SampT	ype: LC	s	Tes	tCode: S	M2320B: Al	kalinity			
Client ID: L	CSW	Batch	n ID: R5	3511	F	aunNo: 5	3511				
Prep Date:		Analysis D	ate: 8/	16/2018	S	SeqNo: 1	763662	Units: <b>mg/L</b>	CaCO3		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (a	is CaCO3)	80.12	20.00	80.00	0	100	90	110			
Sample ID n	nb-1 alk	SampT	ype: ME	BLK	Tes	tCode: S	M2320B: AI	kalinity			
Client ID: F	PBW	Batch	n ID: <b>R5</b>	3613	F	lunNo: 5	3613				
Prep Date:		Analysis D	ate: 8/	21/2018	S	SeqNo: 1	768149	Units: <b>mg/L</b>	CaCO3		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (a	is CaCO3)	ND	20.00								
Sample ID	cs-1 alk	SampT	ype: LC	s	Tes	tCode: S	M2320B: AI	kalinity			
Client ID: L	CSW	Batch	n ID: R5	3613	F	lunNo: 5	3613				
Prep Date:		Analysis D	ate: 8/	21/2018	S	SeqNo: 1	768150	Units: mg/L	CaCO3		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (a	is CaCO3)	77.44	20.00	80.00	0	96.8	90	110			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 57 of 58

Client:AndeaProject:8-8-13	avor Bloomfield 8 RCRA WELLS and REFINER	Y WELL			
Sample ID mb-2 alk	SampType: mblk	TestCode: SM2320B: A	lkalinity		
Prep Date:	Analysis Date: 8/21/2018	SeqNo: 1768175	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 alk	SampType: LCS	TestCode: SM2320B: A	Ikalinity		
Client ID: LCSW	Batch ID: R53613	RunNo: 53613			
Prep Date:	Analysis Date: 8/21/2018	SeqNo: 1768176	Units: mg/L CaCO3		
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80.40 20.00 80.00	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
- PQL Practical Quanitative Limit
- 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

Page 58 of 58

HALL ENVIRONMEN ANALYSIS LABORATORY	H ITAL 7 7	all Environmental Albu EL: 505-345-3975 Website: www.hal	Analy 490 querq FAX: Ilenvii	sis Labor 1 Hawkin ue, NM { 505-345- conmenta	ratory ns NE 87109 -4107 ul.com	San	nple Log-In Check List
Client Name: ANDEA	/OR BLOOMFIEL Wor	rk Order Number:	180	3540			RcptNo: 1
Received By: Anne T	horne 8/9/20	18 6:50:00 AM			0m	h	~
Completed By: Anne T	horne 8/9/20	18 10:14:16 AM			1	1	
Reviewed By: TC	08/09	14			am	e sh	~
LB: FNIM SK	2/18						
Chain of Custody							
1. Is Chain of Custody cor	nplete?		Yes	$\checkmark$	No		Not Present
2. How was the sample de	elivered?		<u>Cou</u>	ier			
3. Was an attempt made t	o cool the samples?		Yes	✓	No		NA 🗌
4. Were all samples receiv	ed at a temperature of >0° C	C to 6.0°C	Yes	$\checkmark$	No		NA 🗌
5 Sample(s) in proper con	tainar(s)2		Vaa		No		
	italiter(s) r		res		NO		
6. Sufficient sample volume	e for indicated test(s)?		Yes	$\checkmark$	No		
7. Are samples (except VO	A and ONG) properly presen	ved?	Yes		No		
8. Was preservative added	to bottles?		Yes		No		NA 🗌
9 VOA visis have zero her	idenace?		Vaa		No		
10 Were any sample conta	iners received broken?		Yes		No		
10. Word any sample some			103		110		# of preserved
11. Does paperwork match i	oottle labels?	,	Yes	✓	No		for pH:24
(Note discrepancies on o	chain of custody)						Adjusted?
12. Are matrices correctly ide	entified on Chain of Custody'	?	Yes		NO		Duty ing
14. Were all holding times al	ble to be met?	,	Yes		No		Checked by: FIM & 9/9/18
(If no, notify customer fo	r authorization.)					Ĺ	
Special Handling (if a	oplicable)						
15. Was client notified of all	discrepancies with this order	r?	Yes	✓	No		
Person Notified:		Date:		****		onexemption of	
By Whom:	f	Via:	eMa	uil 🗌 F	Phone	Fax	In Person
Regarding:						karanan aranan	
Client Instructions							
16. Additional remarks:							
	S ON ALL SAMPLE BOTTLE	S, PER TP 1 REF		-at 8/9/1	18 Iss to	For a	cceptable pH for metals analysis
17. <u>Cooler Information</u>	- mito to -000, -000 and -00	n. Samples neid		41115. 171	ioi lo ana	uysis	

Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By 3 1.0 Good Yes

[		. >							(	J TC	) V)	səlddu8 riA								es.			]
Ø	Ī	Ř					۲ م	) 28 20	juji	e y   Y	/-·	Gen. Chem						×		 alyt			
Ч				_					suc	oin/	1	mədə .nəə					×	×		at Ar			
	Ĭ	2		7109	2					sje	t∋N	Dissolved I				×				 arge			
1	Z		Шo	IM 8	-410	t				(A	0/-	imə2) 0728								_۲			
	C	) <b>Z</b>	ntal.c	ue, N	5-345	sənt					(∀	OV) 80928	×							 ls ai			
	5		nmer	nerq	20	s Rec	S	bCB.	280	8 / s	səbi									thoc			
	Ź	ļ	nviro	Albuq	Fa)	alysis	- (*	'OS''C		N <sup>®</sup>		D.7) anoinA								Me			
		ביי ביי	halleı	-	75	Ana		(S)		<u>т</u> )/7	8 10 1640			;	×				 	 tical			
		Z	ww.	IS NE	5-397				()	.40	g po	EDB (Metho								naly			
	I	2	5	awkir	5-34!					.8†	4 bo	odieM) H9T								 Se A			
		1 [		01 H	il. 50		(0	N/N/C	שפ	NO7	ອ)	88108 H9T	X	×						۵. ۵			
				49(	Te		۸)	ino 26	9) I	ЧЧТ	.+∃1	BTEX+MTB								narks			
,								(1208	3)s'5		.+∃%	atm+xəta							 	 Ren			
											0	P P	102	102	102	02	102	192		Time	/@/Ω ⊥im¤	CL SZ	
	-										- ×	e ser le se le ser le s					•	۰.		ate	118	logu ð	
			lls	ച			ains		a		2	<u>R</u>								äà	Ň	ل ۵۳	
		ush_	We	=	vent		u H		- nvec		N	tive			3	3	4				$\int$		
	E:		CRA	8	ial E	g	: Alle			Kes S	ature:	eserva Type	НСІ	Neat	ONH	ONH	H <sub>2</sub> SC	Neat			3	, V	
	d Tin	p	ne: F	ະພ	Annt	2326	nager		Ē	X	mper	<u> </u>	Ş							 -	3	۲ ۲	<b>.</b>
	Arour	andai	ct Nar		ot #: /	126	ct Mai		ier:	Ð	le Tel	tainer and i	VOA.	0 ml ber-1	0 ml stic-1	5 ml stic-1	5 ml stic-1	0 ml stic-1		ed by:	1	and the second s	
	Tum-	X St	Proje	Date:	Proje	PO#	Proje		Samo	Onlo	Samp	Con Type	40ml	25( aml	25( plas	12( plas	12 plas	50( plas		Receive	<u>UIL</u>		P
·							m	, ac	Ì	_1		Q									T	<b></b>	
	pro	inal			~		or.co	lideti				lest										i	
	ec.	erm			7413		leav	eV 11				sedu	V-64										
	R	ld T			M 8.		Anc	7 (Ei				ole F	MV									$\mathbb{A}$	
	g	mfie		90	d, N	483	ns@	lave	5			amp								,		2	
	<b>ist</b>	00]		R 49	fiel	34-1	.Hai	- ×	\$	Ι.		0								ed by		2	
	Ū J	/or - B		50 CI	Bloom	915-53	Allen.S			EXCE		Matrix	H <sub>2</sub> O							Relinquish	Alinniish		2
	<u>in-</u>	Idea		dress:	_		:#X	kage:	5	(be)		e	32.0							iii (	ॻॖॕ	40	1
	ڄ ک	Ar		g Ad		÷#:	or Fa	) Paci	in let	Ξ	•	<u> </u>	ତି କୁ						 			6	
		Client		Mailin		Phone	email	QAVQC				Date	<u>8/8</u>							Date:		8/18	
	Chain-of-Custody Record	Client: Andeavor - Bloomfield Termina		Mailing Address: 50 CR 4990	Bloomfield, NM 87413	Phone #: 915-534-1483	email or Fax#: Allen.S. Hains@Andeavor.	QA/QC Package:		X EDD (Type) EXCEL		Date Time Matrix Sample Reques	8/8/18 0820 H20 MW-64							Date: Time: Relinquished by:	Date: Time: Relinvived by	8/11 1840 / WINS	

1		•								(N	or	Y) :	səlddu8 riA							 			S.			
0D		12					7 .		(			- ''									$\left  - \right $		alyte			
ا بر		22						,9,0,6,	stie S	uoi	<u>u</u> A	- 'I	ມອບຸງ ແອ <u>ງ</u>	•				×	×	 			t An			
0	Ľ	i \$		109	•			<u> </u>			sjej	эM	Dissolved				×						arge			
N	Σ	ĘŎ	Ę	M 87.	4107					1	(AC	) <b>∕</b> _!	imə2) 0728							 			d Ta			
•	C	58	al.co	e, N	345-	lest						(∀	0V) 80928	×									s an			
		[]	nent	erqu	505-	Redu	S	SCB	1 28	808	/ S(	əpic	oitea9 1808										Spor			
			ironr	nbnc	Fax	/sis	(1	′0S'*	ОЧ	10 <sup>5</sup>	۲, <sub>5</sub> С	)N'I	O,7) snoinA										Meth			
	U	iΫ́	llenv	- Alt		۸nal			la	ĵo T	S	ete	RCRA 8 Md			×							call			
		Ī	w.ha	ШN	3975	1		(5	SMI	S04	2822	01	0168) HAA										alyti			
	- P		Ŵ	rkins	345-:					(L') (L')	209	; po	EDB (Metho							 			ہ An			
				Haw	505-		10	× 11407			814	$\frac{1}{2}$	Atem) HgT										See			
				1901	Tel.		0) ()		280		אני אני	יופ י⊏⊥		×	×							$\left  \right $	rks:			ĺ
				N				(17)	18):	5.9I		+=10											ema			
ſ		ŀ	-											Ν	0	dah							R (		8	
												Ð	· •	8	9	1.3	00	202	23				me		F11	
												)	AL N	١		0	1		, v						180	
				I			s S				0	Sig	€ C HE			100							Date	Date	ر`	
			ells	Ø	يد		lain			'ne		Set	/§/			Å.							8	Y		
		Rush	A V	- 	Ven		en F			Pay		Ŋ	ative	_	Ħ	ິ	ິ	04	t				-	2	Ì	
	.е		CR		al E	g	<b>AII</b>			acy	Yes	ature	Typ	모	Ne	ŇH	Ň	H <sub>2</sub> S(	Ne					Ĭ)	{	l
	d Tin	q	ne: F	Ψ	\uur	2326	ager			Ē	X	nper	⊭ Pr	Ş								<u> </u>	-	¥	1	l
	roun	ndar	l Nan		:#:A	1262	Mar			с.		e Ter	ainer and #	\0	er 1	E -	<u>E</u> 5	E I	i a				d by:	- Aje Aje	۴ ۱	$\left( \right)$
	Irn-A	t Sta	oject	ate:	oject	, 8	oject			ample	n Ice	ample	Conta ype a		250 amb	250 plast	125 plast	125 plast	500 Dast				) I n	Ceive(		ľ
l	1	×	<u>م</u>	Ď	2		ዾ			ő	Ō	ŝ		4							┝──	$\vdash$	<u> ∼</u> &		>	
	7	l					l mos		ation)	1			t ID													
	20C	nin			3		Vor.		/alida				sənl	3									1			ļ
	sec	Ter			3741		dea		^ II'				Req	9-N											~6	
	УF	. pla			IN 8		<b>P</b> An		4 (F				ple	Ž									\		Ş	
	po	mfi		990	d, N	483	ins(		Leve				Sam										 		Z	
	ust	3100		R 49	nfiel	34-1	S.Ha		×		_												hed by	hed b	7	
	Ū	r - E		000	000	2-2	len.				XCE		latrix						┣▶				linquis		J a	
	P	avo		ss: <b>5</b>	B	<u></u>	∣₹	<b>a</b> 5			Щ			-			 	<b> </b>			┼	┢	8 8			$\downarrow$
	air	nde		ddret			ax#	ckag	ard		Type)		Time	ĝ	_····-				┝				me:	<u>б</u> Г ше:	P UC	
	ч С	h: A		ng A		le #:	il or F	XC Pa	tandá	ther			<u>.</u>	8							╉	+	<u>–</u> ط	╗╴	+	ļ
		Clier		Maili		Phot	ema	QAG	⊡ S		Ш Х		Dat	10/0	-				┝╸				Date:	Date:	7/8/L	ł

ĺ	•	(	1					_							N)		Н	00	
ບົ	hain-	of-CL	<u>istody Rec</u>	ord	Turn-Around <sup>-</sup>	Time:				I	AL			RO NO	Z		Ę	2	
Client:	Andea	vor - B	loomfield Tern	ninal	X Standard	□ Rush				: <	Z	Ľ{S	l n	2		<u>ک</u> ا	;	2	
					Project Name	: Refinery	Wells			-	www.h	allenvi	ronme	ental.c	Б				
Mailing ,	Address:	50 CF	र 4990		Date:	8-8-1	8		4901	Hawki	ns NE	- Alb	nquer	due, l	.8 MN	7109			
		Bloom	ifield, NM 8741	3	Project #: An	nual Event			Tel.	605-34	5-397	5	ax 5	05-34	5-410	22			
Phone #		915-53	14-1483		PO# 12623	266						Analy	sis R(	sənbə	ït				
email or	Fax#:	Allen.S	.Hains@Andea	vor.com	Project Mana	ger: Allen H	lains		0) (/				(≯	S.			- 0	7 0	
QAVQC F	ackage: Jard		X Level 4 (Full V	/alidation)				(1208	Juo se			ا (۵۸	05'70	804.7			I.D.&vti	006	
				<b>f</b>	Sampler:	Tracy Pavi	ne	)s'8	א <b>סו</b> פ)⊦	(1	(1.	eto <sup>-</sup>	0 <sup>3'E</sup>	208			suo		(N
X EDD	(Type)	EXCEL			On Ice:	td Yes	No	MT	I Ч ОЯ	.8r	709		N <sup>(E)</sup>	2/5	(∀(	sls	in≜		110
					Sample Temp	erature: 3 (	codeus 1-0	.+∃8	9) (G .+∃8	≯ bc	g po	etale	ON'I	V)	۱-۸C	j9M	/- 'l /- 'l		λ)
Date	Time	Matrix	Sample Req	luest ID	Container Type and #	Preservative Type	イレンシント	BTEX+MTE	BTEX+MTE	PH (Metho	DB (Metho		D, F) snoin/		imə2) 0728	bevlossiC	nedO .nee		s∋lddu8 ìi∕
36/B	200/	H <sub>2</sub> O	MW-3	-	40ml VOA-5	HĊ	202	1	. ×		1	i i	/	8 ×	3	1	, )		/
					250 ml amber-1	Neat	223		×										
					250 ml plastic-1	HNO <sup>3</sup>	502					×							
					125 ml plastic-1	HNO <sub>3</sub>	EAD-									×			
		<u> </u>			125 ml plastic-1	H₂SO₄	802										×		
			<b> </b>		500 ml plastic-1	Neat	502-										×		
																		_	
Date:	Time.	Ralinguish	hv.		Received hv <sup>.</sup>		Date Time								۲ ۲				
geres	0191	K.			Chrade	Le	Stells ILeiu		arks.	0000	, indi		עפווור	202	2	ସାମିୟ	Ī	aiyic	
Date:	Time:  8 4/6	Relinquish	hed by:		Received by:		() Date Time 08/09/09												
		$\mathbb{R}$																	

00	7	r Y					- 5	0.000	(	(N -		() s	Air Bubble:							 	alytes.	
ا الا	Ë						* C	າວຈາ	su	oir	1A - 1A -	· · ·	nedO .neo					×	< X		 et An	
÷		2		7109	2					S	leta	W	bəvlozziQ				X				 arge	
4	Ź		шo	1M 8.	5-410	t				(	40,	∧-!	m92) 0728								 L pu	
	C	?₹	ntal.c	ue, h	5-34!	dues						(¥	8260B (VC	X						 $\geq$	 ds a	
	5	s S	nmer	herg	20 20 X	s Re	S, / <del>/</del>	bCB	280	08 /	sə	n,n bio	itseg 1808								 ithout	
	Ź	; ĮS	enviro	Albuc	Fа	alysi	v	05.0			SIE	519 				×				 	 N N	
		Ę	halle	ч Ш	175	An		(S	WIS	:02	- 85	o	0128) HA9								<u>y</u> tic	
		Ż	www	ins N	45-30				(	1.4	09	ро	EDB (Meth								Anal	
	Ţ	. <		- Lawk	05-3/				(	٢.8	14	ро	лэм) нчт								 See	
				901	Tel. 5		(0)	NMR	<u>אכ</u>	]/O	еB	) E		×	×		:				 - și	
				4	-		(/	(LZO	ະຍາ ຊ)s.		41+ 										emar	
														_ <del></del>			+	+		 1/	Ó R	
					:							Q	AL No. 8 <i>54</i> ن	92	02	ġ	9	92	Ŕ	202	Time //0/	
			ells	<b>Q</b>	it		lains			/ne	<b>9</b>	colues	не 180								S/8/1	) Date
	lime:	🗆 Rush	RCRA W	8 8	nual Even	266	ger: Allen H			Iracy Pay	X Yes	erature:3 <i>c</i>	Preservative Type	HCI	Neat	HNO <sup>3</sup>	HNO3	H₂SO₄	Neat	HK1	Liber.	
	Furn-Around	X Standard	Project Name:	Date:	<sup>o</sup> roject #: An	PO# 12623	<sup>&gt;</sup> roject Manaç			sampler:	On Ice:	Sample Temp	Container Type and #	40ml VOA-5	250 ml amber-1	250 ml plastic-1	125 ml plastic-1	125 ml plastic-1	500 ml plastic-1	40 ML V00-3	Received by:	Received by
ł	ecord	erminal			7413		eavor.com		III Validation)				kequest ID	V-62						ANK		
	stody R	oomfield T		( 4990	field, NM 87	4-1483	.Hains@And		X Level 4 (FI				Sample F	NM					<b>&gt;</b>	TRIPBI		ed by:
	-of-CL	avor - B		50 CF	Bloom	915-53	Allen.S				EXCEL		Matrix	H <sub>2</sub> O					<b></b>	H2O	Relinquish	Relinquish
	hain	Ande		I Addres		#:	r Fax#:	Package:	ndard	er	) (Type)		Time	<u>1</u> 050						1	Time:  [∅[ \	Time: (BYLO
	0	Client:		Mailing		Phone	email c	QA/QC		⊡ D	X EDI		Date	3/8/8					┝→	9/8/6	Date: 8/8 /18	$\frac{\text{Date:}}{\delta_{\mathcal{S}_{1,\mathcal{L}}}}$

															I	3	Ъ.	$\omega$	[	
Ċ	<u>ain-</u>	of-Cu	istody <b>R</b>	lecord	Turn-Around 1	lime:							Z		Č	Σ	Ż		_	
Client:	Andea	vor - B	loomfield 1	<b>Terminal</b>	X Standard	🗆 Rush					Ż	Ì	SI		Ā	20	Ĭ	ŚÖ	רד ד	
					Project Name:	RCRA We	slis				www	.halle	nviron	menta	al.cor	Ę				
Mailing A	Address	50 CF	2 4990		Date:	8-8-1	8		4901	Haw	kins N	- Ш	Albuqi	lerque	ر NN	1871(	60			
		Bloom	field, NM 8	7413	Project #: An	nual Even			Tel.	505-3	45-39	975	Fax	505-	345-7	4107				
Phone #		915-53	4-1483		PO# 12623	266						Ana	alysis	Requ	iest					
email or	Fax#:	Allen.S.	.Hains@An	deavor.com	Project Manac	ger: Allen H	lains		رب (۸	(0		_	†) 	S		-		2 C		
QA/QC P	ackage:							(120	ino si			. (S	′0S'*(	PCB'				)၁.8 (		
Stand     Other	ard		X Level 4 (F	ull Validation)	Samular.	Tracy Day		8)s'5	89) I		(1	WIS		280			suc	tinil		(
	Type)	EXCEL			On Ice:	XYes	NO	IMI	Hat	18.	'Þ0	<u>-</u> 225	0N <sup>(E)</sup>	3 / S		(A(	oin/	8XIK	-	
					Sample Temp	erature: 3	colere 1.0	:+ <u>3</u> 8	Ξ==	א א לפו	g po	3 10 1 0 1		səbi	(A		/ - '	/-'		(X)
Date	Time	Matrix	Sample I	Request ID	Container Type and #	Preservative Type	HEAL No. ないそうよい	BTEX+MTE	BTEX+MTE	HTPH (Metho	EDB (Weth	0128) HA9	O,∃) anoinA	oitee9 1808	OV) 80928	məč) 0728 baylozzi(	Gen. Chem	mədƏ .nəƏ		selddu8 riA
8/8/8	1130	H <sub>2</sub> O	M	N-65	40ml VOA-5	HCI	2010				[		/ 	2	×	8		)		/
					250 ml amber-1	∽ Neat	102	,												
					1 liter کے amber	Neat	702									×				
					250 ml plastic-1	HNO3	qar													1
					125 ml plastic-1	HNO <sub>3</sub>	qp2									×				
					125 ml plastic-1	H₂SO₄	pp.										×			<b>–</b> ·
					500 ml plastic-1	Neat	902										×	×		
																				<u> </u>
Date: ] 9/8/ .a. ]	Time:	Relinguish			Received by:		Date Time S/c/	Rem	arks	See	Ana	lytica	l Met	hods	and	I Tar	get /	Anal	ytes	
Date: 8/8/k	1610 1840		ed by:	) L	Received by		Sloph Store													<u> </u>
- 2 - 2 - 2	2	þ					2 2												ĺ	1

_م		.≻								(N	JO	۲)	səlddu8 riA									_	rtes.	
Ø)		20					<sup>z</sup> O	0.8	λin	ill <b>s</b> ;	AIK	- 'I	məd⊃ .nəĐ						×		 		∖naly	
Ъ	Z	Ě		თ					S	uoi	uΨ	- 'I	mədə .nəə					×	×	-			jet ∕	
2	ž	E R		8710	107						slei V va	эM	Dissolved				×						Tarç	
4	Z		com	MN	15-41	st					(\AC	י-∧( הי	ov) Coozo								 		and	
		≥٤	ental.	que,	25-32	enbe	S	<u>ຊ</u> ე_	1 70	000	/ Si	ע אומ∈		×									ds a	
	5	្តល	onme	Iquer	ax G	is R(	۱- ۲ (۲	05'	, 09 , 09	<sup>'7</sup> 00'	, - V, EC	DN'I	O, A) anoinA								 		etho	
	2	ŝ	envir	Albu	ш	ıalys			P	jo l	S	ete	м 8 АЯЭЯ			×					 		al M	
	_	ľ	v.hall	, Щ	975	Ar		(5	SMI	S0,	728	JO	0168) HA9										lytic	
		ŻŻ	M	dins N	45-3					(1	₽0S	рс	EDB (Meth										Ana	
	-			Hawk	05-3					(٢.	811	, pc	odi∋M) H9T										See	
				901	Tel. 5		(O)	AM/	NON NON		יאכ	9) (G	TPH 8015E	×	×						 		ŝ	
				4	F			(1 7	00)e			+==											emar	
[								(10)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				JTN1-VJT9				~	~	-		 		Ř	
													· ?	2	8	8	3	3	$\beta$				me  le/C	ر سو
												<i>\.</i> 0	AL N SG	`		,	,						⊢ ∽	I SNO
				I			S				40	5	ΗÕ										S S	Date
			ſells	Ø	Ħ		Hair			yne		Sel	X										00	4
		Rus	N N	ଷା	E e		len			Pa		В. В	vative De	5	at	ő	ő	0 <sup>4</sup>	at				4	$\sum$
	me:		RCR	ا: ا	ual	99	sr: Al			rac)	Yes	ratur	reser Tyj	Ĭ	Se	H	L I	H <sub>2</sub> S	Se				2	, J
	nd Ti	ard	me: I	ΨI	Ann	232	nage			H	X	edme	 #	ŝ									+3	- a
	Arou	tanda	ct Na		ct #	126	ct Ma			ler.	e e	ole Te	itaine e and	V OA	0 ml ber-1	0 ml stic-1	5 ml stic-1	5 ml stic-1	0 ml stic-`					ed by
-	Lum-	X Si	Proje	Date:	<sup>o</sup> roje	PO#	Proje			Samp	on Ic	Samp	Con Type	40ml	25 am	25 pla;	12 pla:	12 pla:	50 pla:				Zeceiv	Receiv
1						<u> </u>	ε		<u> </u>				0						<u> </u>		 		<u> </u>	
	rd	nal					r.co		datio				est II											
	000	rmi			413		avo		I Vali				enbe	04										
	Real	d Te			87		Ande		(Ful				e R	MM				<u> </u>	╞─╸				١	
	ð	fiel		0	NN.	83	s@/		vel 4				Idma											
	sto	moo		499	ield	1-14	Hain		X Le				Se										ج ۲ ا	
	<b>S</b>	- B		CR	omf	-534	n.S.I				<u>E</u>		trix	0									uishe	uishe
	÷	Vor		50	Blo	915	Alle				Ň		Ma	Ŧ										
	j.	Idea		lress			;#X	(age:	σ		'pe) _		a L	25									د م	3
	с <mark>Р</mark>	An		g Adt		#.	or Fa	Pack	ndan	ler Ter	D(I)		<b>—</b>	2									Tim	
		lient:		lailin		hone	mail	AQC	] Sta	1 Oth	ED		Date	Jo la	<u> </u>				┼₋→				18 18 16	ate:
	I				I		ן שן	0					l	W.	I	I	I	ł	I	1	I I	i l	ц	

I		•							(N	JO	Y) ;	elddu8 riA									es.	
00		2					2 O	ດຈຸໂມ	une	ыА	' - 't	ແອນ . ແອຍ						×	 		 lalyt	
Ч		:0							suo	inA	- 'l	Gen. Chen					X	×			 at An	
	Ü	2		109	2				1	sis:	эM	Dissolved				×					 arge	
	Z	Ξ	Ę	IM 87	-410					(\	DΛ-!	mə2) 0728	-								 ЪЧТ	
	Q	Į	ital.c	Je, N	5-345	Ines					(∀	OV) 80928	×								ls ar	
		5	nen	nerqı	505	Rec	S,	2 PCB	808	/ S	əpic	iteaq 1808									thod	
	Z	ij	Iviror	Ibndl	Fax	Iysis	(*	°OS'*Oc	1' <sup>2</sup> 0	N' <sup>c</sup> (	DN'I	D, A) anoinA									 Me	
		<u>'</u>	naller	× ۱	5	Ana		ין אופ)	120 	179					×						 rtical	
		Z	ww.	IS NE	5-397				.u.	±09	; po	419M) 803									 unal)	
	I	<	>	awkir	5-34				(1)	811	7 po	HGT (Meth									ee Þ	
		] []		01 H.	el. 50		(0	AM\O	HDF	оя	ອ) ຄ	12108 HQT	×	X					_		S S	
				49	Ť		(/	ino se	9)H	ЧΤ	+38	ITM+X3T8							<u> </u>		mark	
Г								(1208)	)s,g	MT MT	3E+	BTEX+MTE									 Re	
											0	CHO.	200	7208	802	802	802_	802			Time   lø { O	Time K.S.
			Vells	8			ains	-	e e	D No	i sub	HEAL	201								Date 8/R/LL	Date 18/69
	Time:	🗆 Rush	Refinery \	8-8-1	nual Event	266	Jer: Allen H		Tracy Payr	Z <sup>r</sup> Yes	erature:3 &	Preservative Type	HCI	Neat	HNO <sup>3</sup>	HNO <sub>3</sub>	H₂SO₄	Neat			A	and the second
	Turn-Around	X Standard	Project Name:	Date:	Project #: An	PO# 12623	Project Manaç		Sampler:	On Ice:	Sample Temp	Container Type and #	40ml VOA-5	250 ml amber-1	250 ml plastic-1	125 ml plastic-1	125 ml plastic-1	500 ml plastic-1			Received by:	Received by:
	Record	Terminal			87413		ndeavor.com	(Full Validation)				Request ID	NW-44					<b>&gt;</b>		i,		
	stody	loomfield		4990	field, NM	4-1483	.Hains@A	X Level 4				Sample	Ľ									t we
	<u>of-Cu</u>	IVOL - B		50 CF	Bloom	915-53	Allen.S			EXCEL		Matrix	H <sub>2</sub> O								Relinquish	
	hain-	Andea		Address		#:	r Fax#:	Package: dard	Ji	(Type)		Time	1305					<b>→</b>			Time:	Time: C
	ပ	Client:		Mailing		Phone	email o	QA/QC	□ Othe	X EDD		Date	81/8/8								0 20/10 20/10	$\frac{\text{Date:}}{8}$

00		л Х Х Х					1	<del>ر می</del> اinityگ	1) 	or <i>I</i>	( ال ال سو	General Ch Air Bubbles										alytes.	
Ч			   	o	)		Z	્રકા	ioir	IA	wə	General Ch					×	X				et Ar	
00	2	2		3710	2 20		_	K_		sje	ĵ9₩	bevlossiQ				$\times$						L Farg	
×	Z			MN 8	5-41	st				(\(\(\)	DΛ-	im92) 0728			<b> </b>							_p	
		23	ntal	oue.	5-34	anb		<u></u>	700	2/6	∀) אומבי	8260B (VO	X	ļ						×		ds a	
	5	2 10	emuc		× 50	s Re	3 (1		-2,2 2,808	5 / 3 NI'E					<u> </u>						_	it of	
	2	50	anviro	Albu	БЪ	alysi	`	<u> </u>	eto	T s									┞─┼			- ¥	
	_	2	halle	ч Ш	75	An		(SV	liso		3 10	0168) HA9									+	vtica	
		Ż	MMM	N SU	15-39				(1	.408	g po	EDB (Metho						<u> </u>			╞	_  nal	
	1	<		lawki	)5-34				()	'8L	₽ pc	TPH (Meth								$\top$		ee /	
				01 H	el. 5(		(C	O/MR	שם	юя	อ) เ	98108 H9T	$\times$	$\times$								ي دي	
				49	Ē		۱uc	) seĐ	Нd	L +	BE	BTEX + MT										mark	
ļ				<u> </u>	1		(1)	208) s'	am T	⊥ +	38. I	BTEX + MT		<b> </b>								Ret	<del>.</del>
				I			JS SL			No.	as 10	HEAL NO.	692	692-	602	692.	622	602		710		Date Time	Date Time US /04/ 18 /// 18
	Time:	□ Rush	•.•	8-8-18	nual Event	266	ger: Allen Hair		Tracy Payne	M Yes 🔲	ierature: 3 coch	Preservative Type	HCI	NEAT	HNOZ	EONH	Hr.Son	NEAT		HCL			Contraction of the second seco
	Turn-Around	X Standard	Project Name	Date:	Project #: An	PO# 12623	Project Mana		Sampler:	On Ice:	Sample Temp	Container Type and #	4041 YOR-5	250 ML AMBER-1	250ML	1-7112019	PLASTIC-1	SOOML PLASTICI		VOA-3		Received by:	Received by:
	stody Record	omfield Terminal		4990	eld, NM 87413	-1483	lains@Andeavor.com	K Level 4 (Full Validation)				Sample Request ID	DUPLICATE & Z					$\rightarrow$		IRIP BLANK		int r	1 Svi Contra Con
	-of-Cu	Ivor - Blo		50 CR	Bloomfi	915-534	Allen.S.I			EXCEL		Matrix	H, O					$\rightarrow$		H20		Relinquished	Retringuished
	hain	Andea		Address		#:	r Fax#:	Package: Idard	3r	(Type)		Time	ł					$\rightarrow$		1		Time: ( ا ر ا	Time: 1 Gul ()
	0	Client:		Mailing		Phone	email o	QA/QC □ Stan	□ Othe	X EDD		Date	8/8/18	-				$\rightarrow$		9/8/18		Date: Byers	Date: SIRING

#### TABLE 2 Analytical Methods and Target Analytes Facility-Wide Groundwater Monitoring Plan - June 2014 Western Refining Southwest, Inc. - Bloomfield Terminal

VOCs (EPA Method 8260B) <sup>(1)</sup>	
- Target List	
Benzene	
Toluene	
Ethylbenzene	
Xylenes	
Methyl tert butyl ether (MTBE)	
SVOCs - (EPA Method 8270)	
- Method List	
TPH-GRO (EPA Method 8015B)	
- Gasoline Range Organics	
TPH-DRO (EPA Method 8015B)	
- Diesel Range Organics	
- Motor Oil Range Organics	_
Total Carbon Dioxide (Laboratory Calculated)	
- Dissolved CO2	
Specific Conductivity (EPA Method 120.1 or field measurement)	)
- Specific conductance	
TDS (EPA Method 160.1 or field measurement)	
- Total dissolved solids	
General Chemistry - Anions (EPA Method 300.0)	
Fluoride	
Chloride	
Bromide	
Nitrogen, Nitrite (as N)	
Nitrogen, Nitrate (as N)	
Phosphorous, Orthophosphate (As P)	
Sulfate	
General Chemistry - Alkalinity (EPA Method 310.1)	
Alkalinity, Total	
Carbonate	
Bicarbonate	

Total Recoverable Metals (EF	A Method 6010B/7470)
- Target List (not applicable to	River Terrace Sampling Events)
Arsenic	Lead
Barium	Mercury
Cadmium	Selenium
Chromium	Silver
- Target List (for River Terrace	Sampling Events Only)
Lead	
Mercury (DW-1 ON	ILY)
<b>Dissolved Metals (EPA Metho</b>	od 6010B / 7470)
- Target List (for Refinery Con	plex, Outfalls, and River)
Arsenic	Manganese
Barium	Mercury
Cadmium	Potassium
Calcium	Selenium
Chromium	Silver
Copper	Sodium
Iron	Uranium
Lead	Zinc
Magnesium	

TPH = total petroleum hydrocarbons GRO = gasoline range organics VOCs = volatile organic compounds DRO = diesel range organics TDS = total dissolved solids

#### NOTES:

- 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 Piezomenter 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: <u>www.hallenvironmental.com</u>

September 05, 2018

Allen Hains Andeavor Bloomfield 111 CR 4990 Bloomfield, NM 87413 TEL: (915) 534-1483 FAX

RE: Refinery Wells NBB Collection Wells NBB Observation Well OrderNo.: 1808649

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 7 sample(s) on 8/10/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0901

Sincerely,

and

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Lab Order 1808649

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: Refinery Wells NBB Collection	Wells N	Client Sample ID: MW-52Wells NCollection Date: 8/8/2018 3:00:00 PM								
Lab ID: 1808649-001	Matrix:	AQUEOUS	Re	ceived I	<b>Date:</b> 8/	8 8:10:00 AM				
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID		
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm			
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/16/2018 12:41:23 PM	39797		
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/16/2018 12:41:23 PM	39797		
Surr: DNOP	93.8	0	76.6-135		%Rec	1	8/16/2018 12:41:23 PM	39797		
EPA METHOD 300.0: ANIONS							Analyst: smb			
Fluoride	ND	0.15	0.50		mg/L	5	8/13/2018 8:49:56 PM	R53419		
Chloride	880	2.9	50		mg/L	100	8/21/2018 8:37:37 PM	A53614		
Bromide	1.9	0.13	0.50		mg/L	5	8/13/2018 8:49:56 PM	R53419		
Phosphorus, Orthophosphate (As P)	1.6	0.46	2.5	JH	mg/L	5	8/13/2018 8:49:56 PM	R53419		
Sulfate	1100	21	50		mg/L	100	8/21/2018 8:37:37 PM	A53614		
Nitrate+Nitrite as N	27	0.27	1.0	*	mg/L	5	8/13/2018 9:41:23 PM	R53419		
EPA METHOD 200.7: METALS							Analyst: pmf			
Barium	0.012	0.0010	0.0020		mg/L	1	8/15/2018 9:31:27 PM	39768		
Cadmium	ND	0.0010	0.0020		mg/L	1	8/15/2018 9:31:27 PM	39768		
Chromium	ND	0.0018	0.0060		mg/L	1	8/15/2018 9:31:27 PM	39768		
Silver	0.0088	0.0018	0.0050		mg/L	1	8/16/2018 4:03:20 PM	39768		
EPA 200.8: METALS							Analyst: ELS			
Arsenic	0.0043	0.0021	0.0050	J	mg/L	5	8/24/2018 9:21:17 AM	39768		
Lead	ND	0.00023	0.00050		mg/L	1	8/24/2018 7:25:27 AM	39768		
Selenium	0.033	0.0049	0.0050		mg/L	5	8/24/2018 9:21:17 AM	39768		
EPA METHOD 245.1: MERCURY							Analyst: rde			
Mercury	0.000091	0.000037	0.00020	J	mg/L	1	8/23/2018 6:12:11 PM	39963		
EPA METHOD 7470: MERCURY							Analyst: rde			
Mercury	0.000073	0.000038	0.00020	JFiltere	d mg/L	1	8/31/2018 11:13:12 AM	40078		
EPA METHOD 6010B: DISSOLVED META	LS						Analyst: <b>pmf</b>			
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 6:27:51 PM	B53717		
Barium	0.014	0.00049	0.020	J	mg/L	1	8/22/2018 5:34:52 PM	B53642		
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:34:52 PM	B53642		
Calcium	330	0.15	5.0		mg/L	5	8/22/2018 6:27:00 PM	B53642		
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:34:52 PM	B53642		
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:34:52 PM	B53642		
Iron	ND	0.010	0.020		mg/L	1	8/22/2018 5:34:52 PM	B53642		
Lead	ND	0.0050	0.0050		mg/L	1	8/22/2018 5:34:52 PM	B53642		
Magnesium	89	0.011	1.0		mg/L	1	8/22/2018 5:34:52 PM	B53642		
Manganese Reteasium	3.5	0.00074	0.010		mg/L	5	8/22/2018 6:27:00 PM	B53642		
Polassium	4.7 ND	0.075	1.0		mg/L	1	0/22/2010 5:34:52 PM	B53642		
Selenium	ND	0.020	0.050		mg/∟	1	0/21/2010 5:55:14 PM	D03/1/		

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

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
- PQL Practical Quanitative Limit
- 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 Page 1 of 28
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808649

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield			Client	Sample	e ID: M	W-52		
Project: Refinery Wells NBB Collection	Wells N		Colle	ection I	<b>Date:</b> 8/8	8/2018	3:00:00 PM	
Lab ID: 1808649-001	Matrix:	AQUEOUS	Rec	eived I	<b>Date:</b> 8/1	0/201	8 8:10:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: DISSOLVED METAL	.S						Analyst: <b>pm</b>	
Silver	0.0099	0.0010	0.0050		mg/L	1	8/22/2018 5:34:52 PM	B53642
Sodium	630	2.6	10		mg/L	10	8/22/2018 6:28:48 PM	B53642
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 5:55:14 PM	B53717
Zinc	ND	0.020	0.020		mg/L	1	8/22/2018 5:34:52 PM	B53642
EPA METHOD 8260B: VOLATILES							Analyst: RA	4
Benzene	ND	0.17	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
Toluene	ND	0.17	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
1,2,4-Trimethylbenzene	ND	0.25	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
1,3,5-Trimethylbenzene	ND	0.23	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
1,2-Dichloroethane (EDC)	ND	0.40	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
1,2-Dibromoethane (EDB)	ND	0.23	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
Naphthalene	ND	0.29	2.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
1-Methylnaphthalene	ND	0.34	4.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
2-Methylnaphthalene	ND	0.24	4.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
Acetone	ND	0.79	10		µg/L	1	8/13/2018 9:32:00 PM	R53391
Bromobenzene	ND	0.32	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
Bromodichloromethane	ND	0.28	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
Bromoform	ND	0.32	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
Bromomethane	ND	0.26	3.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
2-Butanone	ND	1.3	10		µg/L	1	8/13/2018 9:32:00 PM	R53391
Carbon disulfide	ND	0.39	10		µg/L	1	8/13/2018 9:32:00 PM	R53391
Carbon Tetrachloride	ND	0.13	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391
Chlorobenzene	ND	0.29	1.0		µg/∟	1	8/13/2018 9:32:00 PM	R53391
Chloroethane	ND	0.16	2.0		µg/∟ 	1	8/13/2018 9:32:00 PM	R53391
Chloromothana		0.40	1.0		µg/∟ ua/l	1	8/13/2018 9:32:00 PM	R53391
		0.29	3.0		µg/∟ u∝/l	1	0/13/2010 9.32.00 PM	R33391
2-Chlorotoluone		0.40	1.0		µg/∟ u∝/l	1	0/13/2010 9.32.00 PM	R33391
		0.40	1.0		µg/∟ ug/l	1	0/13/2010 9.32.00 PM	R00091
cis 1.2 Dichloropropopo		0.30	1.0		µg/∟ ug/l	1	0/13/2010 9.32.00 PM	P52201
1.2 Dibromo 2 obloropropono		0.30	1.0		µg/∟ ug/l	1	0/13/2010 9.32.00 FM	R00091
Dibromochloromothano		0.47	2.0		µg/∟ ug/l	1	0/13/2010 9.32.00 PM	P52201
Dibromomethane		0.24	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53301
1 2-Dichlorobenzene		0.32	1.0		μg/L μα/Ι	1	8/13/2018 0.32.00 PM	R52201
1.2 Dichlorobenzene		0.31	1.0		μg/L μα/Ι	1	8/13/2018 0.32.00 PM	R52201
1 4-Dichlorobenzene		0.31	1.0		µg/⊑ ⊔a/I	1	8/13/2018 Q·32·00 PM	R53301
Dichlorodifluoromethane		1 0	1.0		µg/⊏ ⊔a/l	1	8/13/2018 9:32:00 PM	R53301
		1.0	1.0		µg/∟	1	0/10/2010 9.02.00 FIM	1/22291

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

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

Hall Environmental Analysis Laboratory, Inc.

- PQL Practical Quanitative Limit
- 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 Page 2 of 28
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808649

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield	Client Sample ID: MW-52										
Project: Refinery Wells NBB Collection Wells N				Collection Date: 8/8/2018 3:00:00 PM							
<b>Lab ID:</b> 1808649-001	Matrix: A	AQUEOUS	Rec	eived I	8 8:10:00 AM						
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID			
							Analyst: RA	Δ			
1 1-Dichloroethane		0.40	1.0		ug/l	1	8/13/2018 0:32:00 PM	• P53301			
1,1-Dichloroethene		0.40	1.0		µg/∟ ug/l	1	8/13/2018 9:32:00 PM	P53301			
1, 2-Dichloropropage		0.12	1.0		µg/∟ ug/l	1	8/13/2018 0.32.00 PM	P53301			
1 3-Dichloropropane	ND	0.13	1.0		μg/L μα/Ι	1	8/13/2018 9:32:00 PM	R53391			
2 2-Dichloropropane	ND	0.18	2.0		µg/⊑ uɑ/l	1	8/13/2018 9:32:00 PM	R53391			
1 1-Dichloropropene	ND	0.16	1.0		µg/⊑ ⊔a/l	1	8/13/2018 9:32:00 PM	R53391			
Hexachlorobutadiene	ND	0.10	1.0		µg/⊑ ⊔a/l	1	8/13/2018 9:32:00 PM	R53391			
2-Hexanone	ND	0.91	10		µg/⊑ uɑ/l	1	8/13/2018 9:32:00 PM	R53391			
Isopropylbenzene	ND	0.22	1.0		µg/⊏ ua/l	1	8/13/2018 9:32:00 PM	R53391			
4-Isopropyltoluene	ND	0.24	1.0		µg/⊏ ua/l	1	8/13/2018 9:32:00 PM	R53391			
4-Methyl-2-pentanone	ND	0.45	10		µg/⊏ ua/l	1	8/13/2018 9:32:00 PM	R53391			
Methylene Chloride	ND	0.21	3.0		µg/= ua/l	1	8/13/2018 9:32:00 PM	R53391			
n-Butylbenzene	ND	0.25	3.0		µg/= ua/l	1	8/13/2018 9:32:00 PM	R53391			
n-Propylbenzene	ND	0.24	1.0		ua/L	1	8/13/2018 9:32:00 PM	R53391			
sec-Butylbenzene	ND	0.20	1.0		ua/L	1	8/13/2018 9:32:00 PM	R53391			
Styrene	ND	0.25	1.0		ua/L	1	8/13/2018 9:32:00 PM	R53391			
tert-Butvlbenzene	ND	0.22	1.0		ua/L	1	8/13/2018 9:32:00 PM	R53391			
1,1,1,2-Tetrachloroethane	ND	0.25	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391			
1,1,2,2-Tetrachloroethane	ND	0.33	2.0		µg/L	1	8/13/2018 9:32:00 PM	R53391			
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391			
trans-1,2-DCE	ND	0.18	1.0		μg/L	1	8/13/2018 9:32:00 PM	R53391			
trans-1,3-Dichloropropene	ND	0.28	1.0		μg/L	1	8/13/2018 9:32:00 PM	R53391			
1,2,3-Trichlorobenzene	ND	0.28	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391			
1,2,4-Trichlorobenzene	ND	0.27	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391			
1,1,1-Trichloroethane	ND	0.15	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391			
1,1,2-Trichloroethane	ND	0.23	1.0		μg/L	1	8/13/2018 9:32:00 PM	R53391			
Trichloroethene (TCE)	ND	0.26	1.0		μg/L	1	8/13/2018 9:32:00 PM	R53391			
Trichlorofluoromethane	ND	0.17	1.0		μg/L	1	8/13/2018 9:32:00 PM	R53391			
1,2,3-Trichloropropane	ND	0.57	2.0		µg/L	1	8/13/2018 9:32:00 PM	R53391			
Vinyl chloride	ND	0.11	1.0		µg/L	1	8/13/2018 9:32:00 PM	R53391			
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/13/2018 9:32:00 PM	R53391			
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	8/13/2018 9:32:00 PM	R53391			
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	8/13/2018 9:32:00 PM	R53391			
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	8/13/2018 9:32:00 PM	R53391			
Surr: Toluene-d8	93.8	0	70-130		%Rec	1	8/13/2018 9:32:00 PM	R53391			
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG				
Gasoline Range Organics (GRO)	0.034	0.0097	0.050	J	mg/L	1	8/11/2018 4:57:38 AM	B53346			
Surr: BFB	102	0	70-130		%Rec	1	8/11/2018 4:57:38 AM	B53346			

Hall Environmental Analysis Laboratory, Inc.

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Bla	nk
	D	Sample Diluted Due to Matrix Holding times for preparation or analysis exceeded Not Detected at the Reporting Limit		Value above quantitation range	
	Н			Analyte detected below quantitation limits	Page 3 of 28
	ND			Sample pH Not In Range	1 460 5 61 20
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as	s specified

Analytical Report
Lab Order 1808649

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT:	Andeavor Bloomfield				Client Sample ID: MW-52						
<b>Project:</b>	Refinery Wells NBB Collection	Wells N	Collection Date: 8/8/2018 3:00:00 PM								
Lab ID:	1808649-001	Matrix:	Received Date: 8/10/2018 8:10:00 AM								
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID		
CARBON	DIOXIDE							Analyst: JRI	र		
Total Carb	oon Dioxide	200	0	1.0	Н	mg CO2/	1	8/16/2018 5:45:36 PM	1 R53511		
SM2320B:	ALKALINITY							Analyst: JRI	र		
Bicarbona	te (As CaCO3)	202.6	20.00	20.00		mg/L Ca	1	8/16/2018 5:45:36 PM	1 R53511		
Carbonate	e (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	8/16/2018 5:45:36 PM	1 R53511		
Total Alka	linity (as CaCO3)	202.6	20.00	20.00		mg/L Ca	1	8/16/2018 5:45:36 PM	1 R53511		

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

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
- PQL Practical Quanitative Limit
- 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 Page 4 of 28
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
Lab Order 1808649

Date Reported: 9/5/2018

CLIENT:	Andeavor Bloomfield			Clien	t Sample	e ID: M	W-29		
Project:	Refinery Wells NBB Collect	tion Wells N		Coll	lection I	Date: 8/8	8/2018	4:20:00 PM	
Lab ID:	1808649-002	Matrix:	AOUEOUS	Re	ceived I	Date: 8/	10/201	8 8:10:00 AM	
	1000017 002								
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID
EPA METH	HOD 8015D: DIESEL RANGE	E						Analyst: Irm	
Diesel Ra	nge Organics (DRO)	ND	0.31	0.40		mg/L	1	8/16/2018 1:47:49 PM	39797
Motor Oil	Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/16/2018 1:47:49 PM	39797
Surr: D	NOP	99.5	0	76.6-135		%Rec	1	8/16/2018 1:47:49 PM	39797
EPA METH	HOD 300.0: ANIONS							Analyst: smb	
Fluoride		ND	0.15	0.50		mg/L	5	8/13/2018 9:15:39 PM	R53419
Chloride		110	0.59	10		mg/L	20	8/13/2018 9:28:31 PM	R53419
Bromide		0.87	0.13	0.50		mg/L	5	8/13/2018 9:15:39 PM	R53419
Phosphore	us, Orthophosphate (As P)	1.4	0.46	2.5	JH	mg/L	5	8/13/2018 9:15:39 PM	R53419
Sulfate		320	4.1	10		mg/L	20	8/13/2018 9:28:31 PM	R53419
Nitrate+Ni	trite as N	7.1	0.27	1.0		mg/L	5	8/13/2018 9:54:15 PM	R53419
EPA METH	HOD 200.7: METALS							Analyst: pmf	
Barium		0.038	0.0010	0.0020		mg/L	1	8/15/2018 9:35:50 PM	39768
Cadmium		ND	0.0010	0.0020		mg/L	1	8/15/2018 9:35:50 PM	39768
Chromium	1	ND	0.0018	0.0060		mg/L	1	8/15/2018 9:35:50 PM	39768
Silver		0.0036	0.0018	0.0050	J	mg/L	1	8/16/2018 4:05:37 PM	39768
EPA 200.8	: METALS							Analyst: ELS	
Arsenic		0.0022	0.00042	0.0010		mg/L	1	8/24/2018 7:27:48 AM	39768
Lead		0.00031	0.00023	0.00050	J	mg/L	1	8/24/2018 7:27:48 AM	39768
Selenium		0.0017	0.00098	0.0010		mg/L	1	8/24/2018 7:27:48 AM	39768
EPA METH	HOD 245.1: MERCURY							Analyst: rde	
Mercury		0.000085	0.000037	0.00020	J	mg/L	1	8/23/2018 6:14:31 PM	39963
EPA METH	HOD 7470: MERCURY							Analyst: rde	
Mercury		0.000068	0.000038	0.00020	JFiltered	d mg/L	1	8/31/2018 11:15:27 AM	40078
EPA METH	HOD 6010B: DISSOLVED ME	ETALS						Analyst: pmf	
Arsenic		ND	0.020	0.020		mg/L	1	8/27/2018 6:29:53 PM	B53717
Barium		0.031	0.00049	0.020		mg/L	1	8/22/2018 5:36:47 PM	B53642
Cadmium		ND	0.00088	0.0020		mg/L	1	8/22/2018 5:36:47 PM	B53642
Calcium		130	0.15	5.0		mg/L	5	8/22/2018 6:30:40 PM	B53642
Chromium	1	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:36:47 PM	B53642
Copper		ND	0.0026	0.0060		mg/L	1	8/22/2018 5:36:47 PM	B53642
Iron		ND	0.010	0.020		mg/L	1	8/22/2018 5:36:47 PM	B53642
Lead		0.0053	0.0050	0.0050		mg/L	1	8/22/2018 5:36:47 PM	B53642
Magnesiu	m	30	0.011	1.0		mg/L	1	8/22/2018 5:36:47 PM	B53642
Manganes	Se	2.6	0.00074	0.010		mg/L	5	8/22/2018 6:30:40 PM	B53642
Potassium	1	2.7	0.075	1.0		mg/L	1	8/22/2018 5:36:47 PM	B53642
Selenium		ND	0.020	0.050		mg/L	1	8/27/2018 5:57:16 PM	B53/17

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

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

**Qualifiers:** 

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 Page 5 of 28

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Lab Order 1808649 Date Reported: 9/5/2018

#### **CLIENT:** Andeavor Bloomfield Client Sample ID: MW-29 **Project:** Refinery Wells NBB Collection Wells N Collection Date: 8/8/2018 4:20:00 PM Lab ID: 1808649-002 Matrix: AQUEOUS Received Date: 8/10/2018 8:10:00 AM Result PQL **Date Analyzed** Analyses **MDL Oual Units** DF **Batch ID** EPA METHOD 6010B: DISSOLVED METALS Analyst: pmf 0.0040 Silver 0.0010 0.0050 J mg/L 1 8/22/2018 5:36:47 PM B53642 Sodium 190 1.3 5.0 mg/L 5 8/22/2018 6:30:40 PM B53642 Uranium ND 0.025 1 0.10 mg/L 8/27/2018 5:57:16 PM B53717 ND 0.020 Zinc 0.020 mg/L 1 8/22/2018 5:36:47 PM B53642 EPA METHOD 8260B: VOLATILES Analyst: RAA Benzene ND 0.17 1.0 µg/L 1 8/13/2018 9:56:00 PM R53391 Toluene ND 0.17 1.0 8/13/2018 9:56:00 PM R53391 µg/L 1 ND 0.22 R53391 Ethylbenzene 1.0 µg/L 1 8/13/2018 9:56:00 PM Methyl tert-butyl ether (MTBE) 0.67 0.32 1.0 J µq/L 1 8/13/2018 9:56:00 PM R53391 ND 8/13/2018 9:56:00 PM 1,2,4-Trimethylbenzene 0.25 1.0 µg/L 1 R53391 1,3,5-Trimethylbenzene ND 0.23 1.0 µg/L 1 8/13/2018 9:56:00 PM R53391 1,2-Dichloroethane (EDC) ND 0.40 1.0 µg/L 1 8/13/2018 9:56:00 PM R53391 1,2-Dibromoethane (EDB) ND 0.23 1.0 1 8/13/2018 9:56:00 PM R53391 µg/L Naphthalene ND 0.29 2.0 µg/L 1 8/13/2018 9:56:00 PM R53391 1-Methylnaphthalene ND 0.34 4.0 µg/L 1 8/13/2018 9:56:00 PM R53391 2-Methylnaphthalene ND 0.24 4.0 µg/L 1 8/13/2018 9:56:00 PM R53391 Acetone ND 0.79 10 µg/L 1 8/13/2018 9:56:00 PM R53391 ND 0.32 1.0 R53391 Bromobenzene µg/L 1 8/13/2018 9:56:00 PM Bromodichloromethane ND 0.28 1.0 µg/L 1 8/13/2018 9:56:00 PM R53391 ND 0.32 Bromoform 1.0 µg/L 1 8/13/2018 9:56:00 PM R53391 µg/L Bromomethane ND 0.26 3.0 R53391 1 8/13/2018 9:56:00 PM 2-Butanone ND 1.3 10 µg/L 1 8/13/2018 9:56:00 PM R53391 ND 0.39 Carbon disulfide 10 µg/L 1 8/13/2018 9:56:00 PM R53391 Carbon Tetrachloride ND 0.13 1.0 µg/L 1 8/13/2018 9:56:00 PM R53391 Chlorobenzene ND 0.29 1.0 µg/L 1 8/13/2018 9:56:00 PM R53391 Chloroethane ND 2.0 0.16 µg/L 1 8/13/2018 9:56:00 PM R53391 Chloroform ND 0.40 1.0 µg/L 1 8/13/2018 9:56:00 PM R53391 Chloromethane ND 0.29 3.0 8/13/2018 9:56:00 PM R53391 µg/L 1 2-Chlorotoluene ND 0.40 1.0 µg/L 1 8/13/2018 9:56:00 PM R53391 ND 4-Chlorotoluene 0.40 1.0 µg/L 8/13/2018 9:56:00 PM R53391 1 ND cis-1.2-DCE 0.38 1.0 µg/L 1 8/13/2018 9:56:00 PM R53391 ND 8/13/2018 9:56:00 PM 0.30 1.0 µg/L R53391 cis-1,3-Dichloropropene 1

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

ND

ND

ND

ND

ND

ND

ND

0.47

0.24

0.32

0.31

0.31

0.40

1.0

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

2.0

1.0

1.0

1.0

1.0

1.0

1.0

Н Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

1,2-Dibromo-3-chloropropane

Dibromochloromethane

Dibromomethane

1,2-Dichlorobenzene

1.3-Dichlorobenzene

1,4-Dichlorobenzene

**Oualifiers:** 

Dichlorodifluoromethane

\*

S % Recovery outside of range due to dilution or matrix

Analyte detected in the associated Method Blank В

1

1

1

1

1

1

1

8/13/2018 9:56:00 PM

8/13/2018 9:56:00 PM

8/13/2018 9:56:00 PM

8/13/2018 9:56:00 PM

8/13/2018 9:56:00 PM

8/13/2018 9:56:00 PM

8/13/2018 9:56:00 PM

R53391

R53391

R53391

R53391

R53391

R53391

R53391

Е Value above quantitation range

µg/L

µg/L

µg/L

µg/L

µg/L

µg/L

µg/L

- I Analyte detected below quantitation limits Page 6 of 28
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Lab Order 1808649

### Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: Refinery Wells NBB Collection V	Client Sample ID: MW-29 Collection Date: 8/8/2018 4·20:00 PM								
Lab ID: 1808649-002	Matrix: AQUEOUS			<b>Received Date:</b> 8/10/2018 8:10:00 AM					
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID	
EPA METHOD 8260B: VOLATILES							Analyst: RA	A	
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
1,1-Dichloroethene	ND	0.12	1.0		μg/L	1	8/13/2018 9:56:00 PM	I R53391	
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
1,3-Dichloropropane	ND	0.27	1.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
2,2-Dichloropropane	ND	0.18	2.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
1,1-Dichloropropene	ND	0.16	1.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
Hexachlorobutadiene	ND	0.80	1.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
2-Hexanone	ND	0.91	10		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
Isopropylbenzene	ND	0.22	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
4-Isopropyltoluene	ND	0.24	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
4-Methyl-2-pentanone	ND	0.45	10		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
Methylene Chloride	ND	0.21	3.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
n-Butylbenzene	ND	0.25	3.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
n-Propylbenzene	ND	0.24	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
sec-Butylbenzene	ND	0.20	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
Styrene	ND	0.25	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
tert-Butylbenzene	ND	0.22	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
1,1,1,2-Tetrachloroethane	ND	0.25	1.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
1,1,2,2-Tetrachloroethane	ND	0.33	2.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
trans-1,2-DCE	ND	0.18	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
trans-1,3-Dichloropropene	ND	0.28	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
1,2,3-Trichlorobenzene	ND	0.28	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
1,2,4-Trichlorobenzene	ND	0.27	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
1,1,1-Trichloroethane	ND	0.15	1.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
1,1,2-Trichloroethane	ND	0.23	1.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
Trichloroethene (TCE)	ND	0.26	1.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
Trichlorofluoromethane	ND	0.17	1.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
1,2,3-Trichloropropane	ND	0.57	2.0		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
Vinyl chloride	ND	0.11	1.0		µg/L	1	8/13/2018 9:56:00 PN	I R53391	
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/13/2018 9:56:00 PM	I R53391	
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	8/13/2018 9:56:00 PM	I R53391	
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	8/13/2018 9:56:00 PM	I R53391	
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	8/13/2018 9:56:00 PM	I R53391	
Surr: Toluene-d8	93.0	0	70-130		%Rec	1	8/13/2018 9:56:00 PM	I R53391	
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG		
Gasoline Range Organics (GRO)	0.024	0.0097	0.050	J	mg/L	1	8/11/2018 5:20:43 AN	I B53346	
Surr: BFB	102	0	70-130		%Rec	1	8/11/2018 5:20:43 AM	I B53346	
								-	

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Bla	ank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range	
	Н	H Holding times for preparation or analysis exceeded		Analyte detected below quantitation limits	Page 7 of 28
ND Not Detected at		Not Detected at the Reporting Limit	Р	Sample pH Not In Range	1 uge / 01 20
	POL	Practical Quanitative Limit	RL	Reporting Detection Limit	

S % Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report
Lab Order 1808649

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Project:	Andeavor Bloomfield Refinery Wells NBB Collect	tion Wells N Client Sample ID: MW-29 Collection Date: 8/8/2018 4:20:00 PM								
Lab ID:	1808649-002	Matrix: A	Matrix: AQUEOUS Received Date: 8/10/2018					8 8:10:00 AM		
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID	
CARBON	DIOXIDE							Analyst: <b>JR</b>	R	
Total Car	bon Dioxide	280	0	1.0	Н	mg CO2	/ 1	8/16/2018 5:57:27 PI	M R53511	
SM2320B	: ALKALINITY							Analyst: JR	R	
Bicarbona	ate (As CaCO3)	309.2	20.00	20.00		mg/L Ca	1	8/16/2018 5:57:27 PI	M R53511	
Carbonate	e (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	8/16/2018 5:57:27 PI	M R53511	
Total Alka	alinity (as CaCO3)	309.2	20.00	20.00		mg/L Ca	1	8/16/2018 5:57:27 PI	M R53511	

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
- PQL Practical Quanitative Limit
- 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 Page 8 of 28
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808649

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield		Client Sample ID: CW 0+60 Collection Date: 8/9/2018 8:00:00 AM								
Project: Refinery Wells NBB Collection	n Wells N									
Lab ID: 1808649-003	Matrix: AQUEOUS		Rec	Received Date: 8/10/2018 8:10:00 AM						
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID		
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm	1		
Diesel Range Organics (DRO)	0.33	0.31	0.40	J	mg/L	1	8/16/2018 2:09:51 PN	1 39797		
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/16/2018 2:09:51 PN	1 39797		
Surr: DNOP	91.3	0	76.6-135		%Rec	1	8/16/2018 2:09:51 PN	1 39797		
EPA METHOD 8260: VOLATILES SHORT	LIST						Analyst: AG			
Benzene	0.70	0.17	1.0	J	µg/L	1	8/11/2018 5:43:43 AM	A C53346		
Toluene	ND	0.17	1.0		µg/L	1	8/11/2018 5:43:43 AM	A C53346		
Ethylbenzene	1.8	0.22	1.0		µg/L	1	8/11/2018 5:43:43 AM	A C53346		
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/11/2018 5:43:43 AN	A C53346		
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/11/2018 5:43:43 AN	A C53346		
Surr: 4-Bromofluorobenzene	122	0	70-130		%Rec	1	8/11/2018 5:43:43 AN	A C53346		
Surr: Toluene-d8	103	0	70-130		%Rec	1	8/11/2018 5:43:43 AN	A C53346		

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
- PQL Practical Quanitative Limit
- 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 Page 9 of 28
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report
Lab Order 1808649

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield		Client Sample ID: FIELD BLANK #3									
Project: Refinery Wells NBB Collection	Wells N	Wells NCollection Date: 8/9/2018 8:25:00 AM									
Lab ID: 1808649-004	Matrix:	AQUEOUS	Rec	Received Date: 8/10/2018 8:10:00 AM							
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID			
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm				
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/16/2018 2:32:02 PM	1 39797			
Surr: DNOP	87.4	0	76.6-135		%Rec	1	8/16/2018 2:32:02 PM	1 39797			
EPA METHOD 8260: VOLATILES SHORT	LIST						Analyst: AG				
Benzene	ND	0.17	1.0		µg/L	1	8/11/2018 6:06:53 AM	1 C5334€			
Toluene	0.22	0.17	1.0	J	µg/L	1	8/11/2018 6:06:53 AN	1 C53346			
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/11/2018 6:06:53 AN	1 C53346			
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/11/2018 6:06:53 AN	1 C53346			
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/11/2018 6:06:53 AN	1 C53346			
Surr: 4-Bromofluorobenzene	120	0	70-130		%Rec	1	8/11/2018 6:06:53 AN	1 C53346			
Surr: Toluene-d8	104	0	70-130		%Rec	1	8/11/2018 6:06:53 AN	1 C53346			

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
- PQL Practical Quanitative Limit
- 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 Page 10 of 28
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808649

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield			Client	Client Sample ID: OW 25+70							
<b>Project:</b> Refinery Wells NBB Collection	n Wells N		Collection Date: 8/9/2018 11:30:00 AM								
Lab ID: 1808649-005	Matrix: AQUEOUS		Ree	Received Date: 8/10/2018 8:10:00 AM							
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID			
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm				
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/16/2018 2:54:05 PN	i 39797			
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/16/2018 2:54:05 PN	I 39797			
Surr: DNOP	95.2	0	76.6-135		%Rec	1	8/16/2018 2:54:05 PM	l 39797			
EPA METHOD 8260: VOLATILES SHORT	LIST						Analyst: AG				
Benzene	ND	0.17	1.0		µg/L	1	8/11/2018 6:29:55 AN	I C53346			
Toluene	ND	0.17	1.0		µg/L	1	8/11/2018 6:29:55 AN	I C53346			
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/11/2018 6:29:55 AN	I C53346			
Methyl tert-butyl ether (MTBE)	0.40	0.32	1.0	J	µg/L	1	8/11/2018 6:29:55 AN	I C53346			
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/11/2018 6:29:55 AN	I C53346			
Surr: 4-Bromofluorobenzene	120	0	70-130		%Rec	1	8/11/2018 6:29:55 AN	I C53346			
Surr: Toluene-d8	101	0	70-130		%Rec	1	8/11/2018 6:29:55 AN	I C53346			
EPA METHOD 8015D: GASOLINE RANG	E						Analyst: AG				
Gasoline Range Organics (GRO)	0.14	0.0097	0.050		mg/L	1	8/11/2018 6:29:55 AN	I B53346			
Surr: BFB	106	0	70-130		%Rec	1	8/11/2018 6:29:55 AN	I B53346			

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
- PQL Practical Quanitative Limit
- 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 Page 11 of 28
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808649

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield		Client Sample ID: DUPLICATE #3									
Project: Refinery Wells NBB Collection	a Wells N Collection Date: 8/9/2018										
Lab ID: 1808649-006	Matrix: A	QUEOUS	Rec	<b>Received Date:</b> 8/10/2018 8:10:00 AM							
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID			
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm				
Diesel Range Organics (DRO)	0.37	0.31	0.40	J	mg/L	1	8/16/2018 3:16:18 PM	1 39797			
Surr: DNOP	85.3	0	76.6-135		%Rec	1	8/16/2018 3:16:18 PM	1 39797			
EPA METHOD 8260: VOLATILES SHORT	LIST						Analyst: AG				
Benzene	0.73	0.17	1.0	J	µg/L	1	8/11/2018 6:53:03 AN	1 C53346			
Toluene	ND	0.17	1.0		µg/L	1	8/11/2018 6:53:03 AN	1 C53346			
Ethylbenzene	1.6	0.22	1.0		µg/L	1	8/11/2018 6:53:03 AN	1 C53346			
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/11/2018 6:53:03 AN	1 C53346			
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/11/2018 6:53:03 AN	1 C53346			
Surr: 4-Bromofluorobenzene	121	0	70-130		%Rec	1	8/11/2018 6:53:03 AN	1 C53346			
Surr: Toluene-d8	103	0	70-130		%Rec	1	8/11/2018 6:53:03 AM	1 C53346			

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
- PQL Practical Quanitative Limit
- 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 Page 12 of 28
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808649

Date Reported: 9/5/2018

CLIENT: Project:	Andeavor Bloomfield Refinery Wells NBB Collection	ı Wells N		Client Colle	Sample Sample ction I	e ID: Tri Date:	ip Bla	nk	
Lab ID:	1808649-007	Matrix: A	QUEOUS	Rec	eived I	<b>Date:</b> 8/1	0/201	8 8:10:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METI	HOD 8260B: VOLATILES							Analyst: RAA	
Benzene		ND	0.17	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
Toluene		ND	0.17	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
Ethylbenz	ene	ND	0.22	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
Methyl ter	t-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/13/2018 10:20:00 PN	R53391
1,2,4-1 rim	nethylbenzene	ND	0.25	1.0		µg/L	1	8/13/2018 10:20:00 PN	R53391
1,3,5-1 fiff	nethylbenzene	ND	0.23	1.0		µg/∟ ug/l	1	8/13/2018 10:20:00 PN	E R53391
1,2-Dichic	moethane (EDB)		0.40	1.0		µg/∟ ug/l	1	8/13/2018 10:20:00 PM	R55391
Nanhthale		ND	0.25	2.0		µg/∟ ug/l	1	8/13/2018 10:20:00 PM	R53391
1-Methvln	aphthalene	ND	0.34	4.0		ua/L	1	8/13/2018 10:20:00 PM	R53391
2-Methyln	aphthalene	ND	0.24	4.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
Acetone		ND	0.79	10		µg/L	1	8/13/2018 10:20:00 PM	R53391
Bromober	nzene	ND	0.32	1.0		μg/L	1	8/13/2018 10:20:00 PM	R53391
Bromodic	hloromethane	ND	0.28	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
Bromoforr	n	ND	0.32	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
Bromome	thane	ND	0.26	3.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
2-Butanor	ne	ND	1.3	10		µg/L	1	8/13/2018 10:20:00 PM	R53391
Carbon di	sulfide	ND	0.39	10		µg/L	1	8/13/2018 10:20:00 PM	R53391
Carbon Te	etrachloride	ND	0.13	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
Chlorober	nzene	ND	0.29	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
Chloroeth	ane	ND	0.16	2.0		µg/L	1	8/13/2018 10:20:00 PN	R53391
Chloroforr	n	ND	0.40	1.0		µg/L	1	8/13/2018 10:20:00 PN	R53391
Chlorome	thane	ND	0.29	3.0		µg/L	1	8/13/2018 10:20:00 PN	R53391
2-Chloroto	bluene	ND	0.40	1.0		µg/∟	1	8/13/2018 10:20:00 PN	R53391
		ND	0.40	1.0		µg/∟ ug/L	1	8/13/2018 10:20:00 PN	DE2201
cis-1,2-DC	chloropropene	ND	0.30	1.0		µg/∟ ug/l	1	8/13/2018 10:20:00 PM	R53301
1 2-Dibror	mo-3-chloropropane	ND	0.30	2.0		μg/L μα/Ι	1	8/13/2018 10:20:00 PM	R53391
Dibromoc	hloromethane	ND	0.24	1.0		µg/⊏ ug/l	1	8/13/2018 10:20:00 PM	R53391
Dibromor	nethane	ND	0.32	1.0		ua/L	1	8/13/2018 10:20:00 PM	R53391
1,2-Dichlo	probenzene	ND	0.31	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
1,3-Dichlo	probenzene	ND	0.31	1.0		μg/L	1	8/13/2018 10:20:00 PM	R53391
1,4-Dichlo	robenzene	ND	0.40	1.0		μg/L	1	8/13/2018 10:20:00 PM	R53391
Dichlorodi	fluoromethane	ND	1.0	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
1,1-Dichlo	proethane	ND	0.40	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
1,1-Dichlo	proethene	ND	0.12	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
1,2-Dichlo	propropane	ND	0.15	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
1,3-Dichlo	propropane	ND	0.27	1.0		µg/L	1	8/13/2018 10:20:00 PM	R53391
2,2-Dichlo	propropane	ND	0.18	2.0		µg/L	1	8/13/2018 10:20:00 PM	R53391

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 13 of 28
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808649

Date Reported: 9/5/2018

Lab ID:       1808649-007       Matrix:       AQUEOUS       Received Date:       8/10/2018       8:10:00 AM         Analyses       Result       MDL       PQL       Qual       Units       DF       Date Analyzed         EPA METHOD 8260B:       VOLATILES       Analyst:       RA	Batch ID A R53391 A R53391 A R53391 A R53391 A R53391 A R53391
Analyses     Result     MDL     PQL     Qual     Units     DF     Date Analyzed       EPA METHOD 8260B: VOLATILES     Analyst:     RA	Batch ID           A           R53391           A           R53391           A           R53391           A           R53391           A           R53391           A           R53391
EPA METHOD 8260B: VOLATILES Analyst: RA	<ul> <li>A R53391</li> <li>A R53391</li> <li>A R53391</li> <li>A R53391</li> <li>A R53391</li> <li>A R53391</li> </ul>
	<ul> <li>A R53391</li> <li>A R53391</li> <li>A R53391</li> <li>A R53391</li> <li>A R53391</li> <li>A R53391</li> </ul>
1,1-Dichloropropene ND 0.16 1.0 µg/L 1 8/13/2018 10:20:00 P	<ul> <li><i>I</i> R53391</li> <li><i>I</i> R53391</li> <li><i>I</i> R53391</li> <li><i>I</i> R53391</li> </ul>
Hexachlorobutadiene ND 0.80 1.0 µg/L 1 8/13/2018 10:20:00 P	/ R53391 / R53391
2-Hexanone ND 0.91 10 µg/L 1 8/13/2018 10:20:00 P	/ R53391
Isopropylbenzene ND 0.22 1.0 µg/L 1 8/13/2018 10:20:00 P	
4-Isopropyltoluene ND 0.24 1.0 µg/L 1 8/13/2018 10:20:00 P	/1 K53391
4-Methyl-2-pentanone ND 0.45 10 µg/L 1 8/13/2018 10:20:00 P	A R53391
Methylene Chloride ND 0.21 3.0 µg/L 1 8/13/2018 10:20:00 P	/ R53391
n-Butylbenzene ND 0.25 3.0 µg/L 1 8/13/2018 10:20:00 P	/ R53391
n-Propylbenzene ND 0.24 1.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
sec-Butylbenzene ND 0.20 1.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
Styrene ND 0.25 1.0 μg/L 1 8/13/2018 10:20:00 P	A R53391
tert-Butylbenzene ND 0.22 1.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
1,1,1,2-Tetrachloroethane ND 0.25 1.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
1,1,2,2-Tetrachloroethane ND 0.33 2.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
Tetrachloroethene (PCE) ND 0.15 1.0 μg/L 1 8/13/2018 10:20:00 P	A R53391
trans-1,2-DCE ND 0.18 1.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
trans-1,3-Dichloropropene ND 0.28 1.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
1,2,3-Trichlorobenzene ND 0.28 1.0 μg/L 1 8/13/2018 10:20:00 P	A R53391
1,2,4-Trichlorobenzene ND 0.27 1.0 μg/L 1 8/13/2018 10:20:00 P	A R53391
1,1,1-Trichloroethane ND 0.15 1.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
1,1,2-Trichloroethane ND 0.23 1.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
Trichloroethene (TCE)         ND         0.26         1.0         μg/L         1         8/13/2018 10:20:00 P	A R53391
Trichlorofluoromethane         ND         0.17         1.0         μg/L         1         8/13/2018 10:20:00 P	A R53391
1,2,3-Trichloropropane ND 0.57 2.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
Vinyl chloride ND 0.11 1.0 µg/L 1 8/13/2018 10:20:00 P	A R53391
Xylenes, Total ND 0.64 1.5 μg/L 1 8/13/2018 10:20:00 P	A R53391
Surr: 1,2-Dichloroethane-d4 103 0 70-130 %Rec 1 8/13/2018 10:20:00 P	A R53391
Surr: 4-Bromofluorobenzene         101         0         70-130         %Rec         1         8/13/2018 10:20:00 P	A R53391
Surr: Dibromofluoromethane         109         0         70-130         %Rec         1         8/13/2018 10:20:00 P	Л R53391
Surr: Toluene-d8 93.5 0 70-130 %Rec 1 8/13/2018 10:20:00 P	Л R53391
EPA METHOD 8015D: GASOLINE RANGE Analyst: AG	
Gasoline Range Organics (GRO) 0.043 0.0097 0.050 J mg/L 1 8/13/2018 3:41:05 PM	B53389
Surr: BFB 102 0 70-130 %Rec 1 8/13/2018 3:41:05 PM	B53389

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank		
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range		
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 14 of 28	
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	1 4 50 1 1 01 20	
	PQL	Practical Quanitative Limit	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.

WO#:	1808649

05-Sep-18

Client: Project:	Andeav Refiner	or Bloomfi y Wells NE	eld BB Colle	ction Wells	NBB Obs						
Sample ID	MB-39768	Samp	Туре: МЕ	BLK	Test	tCode: El	PA Method	200.7: Metals			
Client ID:	PBW	Bato	h ID: 39	768	R	unNo: 5	3461				
Prep Date:	8/14/2018	Analysis	Date: 8/	15/2018	S	eqNo: 1	761947	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		ND	0.0020								
Cadmium		ND	0.0020								
Chromium		ND	0.0060								
Silver		ND	0.0050								
Sample ID	LCS-39768	Samp	Type: LC	S	Test	tCode: El	PA Method	200.7: Metals			
Client ID:	LCSW	Bato	h ID: 39	768	R	unNo: 5	3461				
Prep Date:	8/14/2018	Analysis	Date: 8/	15/2018	S	eqNo: 1	761949	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.50	0.0020	0.5000	0	100	85	115			
Cadmium		0.51	0.0020	0.5000	0	102	85	115			
Chromium		0.51	0.0060	0.5000	0	101	85	115			
Silver		0.10	0.0050	0.1000	0	104	85	115			
Sample ID	LLLCS-39768	Samp	Type: LC	SLL	Test	tCode: El	PA Method	200.7: Metals			
Client ID:	BatchQC	Bato	ch ID: 39	768	R	unNo: 5	3461				
Prep Date:	8/14/2018	Analysis	Date: 8/	15/2018	S	eqNo: 1	761964	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium		0.0020	0.0020	0.002000	0	101	50	150			
Cadmium		0.0018	0.0020	0.002000	0	88.5	50	150			J
Chromium		0.0055	0.0060	0.006000	0	92.2	50	150			J
Silver		0.0054	0.0050	0.005000	0	107	50	150			

#### **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
- PQL Practical Quanitative Limit
- 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

Page 15 of 28

WO#:	1808649

Client: Project:	Andeavo Refinery	r Bloomf Wells NI	ield BB Col	lection Wells	NBB Obs						
Sample ID	MB-39768	Samp	оТуре: 🛚	<b>MBLK</b>	Tes	tCode: E	PA 200.8: M	letals			
Client ID:	PBW	Bat	ch ID: 3	9768	R	unNo: 5	53477				
Prep Date:	8/14/2018	Analysis	Date:	8/16/2018	S	SeqNo: 1	762350	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	0.001	0							
Lead		ND	0.0005	0							
Selenium		ND	0.001	0							
Sample ID	MSLLLCS-39768	Samp	oType: L	CSLL	Tes	tCode: E	PA 200.8: M	letals			
Client ID:	BatchQC	Bat	Batch ID: 39768 RunNo: 53477								
Prep Date:	8/14/2018	Analysis	Date:	8/16/2018	S	SeqNo: 1	762351	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.0010	0.001	0 0.001000	0	101	50	150			
Lead		0.00047	0.0005	0 0.0005000	0	94.7	50	150			J
Selenium		0.0010	0.001	0 0.001000	0	99.6	50	150			J
Sample ID	MSLCS-39768	Samp	oType: L	_CS	Tes	tCode: E	PA 200.8: M	letals			
Client ID:	LCSW	Bat	ch ID: 3	9768	R	RunNo: 5	53477				
Prep Date:	8/14/2018	Analysis	Date:	8/16/2018	S	SeqNo: 1	762352	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.025	0.001	0 0.02500	0	98.4	85	115			
Lead		0.012	0.0005	0 0.01250	0	96.8	85	115			
Selenium		0.025	0.001	0 0.02500	0	98.5	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
- PQL Practical Quanitative Limit
- 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
- Page 16 of 28

Client: Project:	Andea Refine	vor Bloomfield ry Wells NBB Colle	ection Wells	NBB Obs						
Sample ID	MB-39963	SampType: <b>M</b>	BLK	TestCode: EPA Method 245.1: Mercury						
Client ID:	PBW	Batch ID: 39	D: 39963 RunNo: 53674							
Prep Date:	8/23/2018	Analysis Date: 8	/23/2018	S	GeqNo: 177	70019	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC L	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.000071 0.00020								J
Sample ID	LCS-39963	SampType: L(	cs	Test	tCode: EPA	A Method	245.1: Mercur	у		
Client ID:	LCSW	Batch ID: 39	9963	R	aunNo: <b>536</b>	674				
Prep Date:	8/23/2018	Analysis Date: 8	/23/2018	S	GeqNo: 177	70020	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC L	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0051 0.00020	0.005000	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
- PQL Practical Quanitative Limit
- 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
- Page 17 of 28

WO#: 1808649

Client: Project:	Andeavor Bloomfi Refinery Wells NF	ield 3B Colle	ction Wells	NBB Obs						
Sample ID MB	Samp	Type: <b>m</b> t	olk	Test	tCode: EF	PA Method	300.0: Anions	;		
Client ID: PBW	Bate	ch ID: <b>R5</b>	3419	R	unNo: 5:	3419				
Prep Date:	Analysis	Date: 8/	13/2018	S	eqNo: 17	759422	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, Orthophospl	hate (As P 0.25	0.50								J
Sulfate	ND	0.50								
Nitrate+Nitrite as N	0.055	0.20								J
Sample ID LCS	Samp	Type: Ics	5	Test	tCode: EF	PA Method	300.0: Anions			
Client ID: LCSW	Bate	ch ID: <b>R5</b>	3419	R	RunNo: <b>53419</b>					
Prep Date:	Analysis	Date: 8/	13/2018	S	eqNo: 17	759423	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.9	90	110			
Chloride	4.6	0.50	5.000	0	92.6	90	110			
Bromide	2.4	0.10	2.500	0	95.2	90	110			
Phosphorus, Orthophospl	hate (As P 4.6	0.50	5.000	0	92.9	90	110			
Sulfate	9.1	0.50	10.00	0	91.5	90	110			
Nitrate+Nitrite as N	3.3	0.20	3.500	0	94.9	90	110			
Sample ID MB	Samp	Type: <b>m</b> t	olk	Test	tCode: EF	PA Method	300.0: Anions			
Client ID: PBW	Bate	ch ID: A5	3614	R	unNo: 5:	3614				
Prep Date:	Analysis	Date: 8/	21/2018	S	eqNo: 17	768425	Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								
Sample ID LCS	Samp	Type: Ics	;	Test	tCode: EF	PA Method	300.0: Anions			
Client ID: LCSW	Bate	ch ID: A5	3614	R	unNo: 5	3614				
Prep Date:	Analysis	Date: 8/	21/2018	SeqNo: 1768426			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.7	90	110			
Sulfate	9.3	0.50	10.00	0	93.4	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
- PQL Practical Quanitative Limit
- 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

Page 18 of 28

WO#:	1808649
	05-Sep-18

Client: Project:	Andeavor Refinery	Bloomfie Wells NB	eld B Colle	ection Wells	NBB Obs						
Sample ID	LCS-39797	SampT	ype: LC	cs	TestCode: EPA Method 8015D: Diesel Range						
Client ID:	LCSW	Batch	h ID: 39	797	F	RunNo: 5	3482				
Prep Date:	8/15/2018	Analysis D	Date: 8	/16/2018	S	SeqNo: 1	762631	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (	Organics (DRO)	2.3	0.40	2.500	0	90.1	76.5	158			
Surr: DNOP		0.22		0.2500		86.8	76.6	135			
Sample ID	MB-39797	SampT	ype: M	BLK	Tes	tCode: El	PA Method	8015D: Diese	I Range		
Client ID:	PBW	797	RunNo: 53482								
Prep Date:	8/15/2018	Analysis D	Date: 8	/16/2018	S	SeqNo: 1	762632	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (	Organics (DRO)	ND	0.40								
Motor Oil Rang	e Organics (MRO)	ND	2.5								
Surr: DNOP		0.47		0.5000		94.0	76.6	135			
Sample ID	1808649-001BMS	SampT	ype: M	S	Tes	tCode: El	PA Method	8015D: Diese	l Range		
Client ID:	MW-52	Batch	h ID: 39	797	F	RunNo: 5	3482				
Prep Date:	8/15/2018	Analysis D	Date: 8	/16/2018	5	SeqNo: 1	762947	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (	Organics (DRO)	2.6	0.40	2.500	0	103	89.6	145			
Surr: DNOP		0.23		0.2500		91.2	76.6	135			
Sample ID	1808649-001BMS	) SampT	ype: M	SD	Tes	tCode: El	PA Method	8015D: Diese	l Range		
Client ID:	MW-52	Batch	h ID: 39	797	F	RunNo: 5	3482				
Prep Date:	8/15/2018	Analysis D	Date: 8	/16/2018	5	SeqNo: 1	762948	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (	Organics (DRO)	2.6	0.40	2.500	0	106	89.6	145	2.50	20	
Surr: DNOP		0.23		0.2500		92.3	76.6	135	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
- PQL Practical Quanitative Limit
- 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
- Page 19 of 28

# Client:Andeavor BloomfieldProject:Refinery Wells NBB Collection Wells NBB Obs

Sample ID 100ng lcs	SampT	ype: LC	:S4	Tes	tCode: El	PA Method	8260: Volatile	es Short L	.ist	
Client ID: BatchQC	Batch	n ID: C5	3346	F	RunNo: 5	3346				
Prep Date:	Analysis D	ate: 8/	10/2018	5	SeqNo: 1	757485	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	80	120			
Toluene	21	1.0	20.00	0	106	80	120			
Ethylbenzene	21	1.0	20.00	0	104	80	120			
Methyl tert-butyl ether (MTBE)	19	1.0	20.00	0	94.6	80	120			
Xylenes, Total	62	1.5	60.00	0	104	80	120			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			
Sample ID rb SampType: MBLK										
Sample ID <b>rb</b>	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260: Volatile	es Short L	.ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b>	SampT Batch	ype: <b>ME</b> 1D: <b>C5</b>	3LK 3346	Tes F	tCode: El RunNo: 5	PA Method 3346	8260: Volatile	es Short L	ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date:	SampT Batch Analysis D	ype: <b>ME</b> 1D: <b>C5</b> ate: <b>8</b> /	3LK 3346 10/2018	Tes F S	tCode: El RunNo: 5 SeqNo: 1	PA Method 3346 757490	8260: Volatile Units: μg/L	es Short L	ist	
Sample ID <b>rb</b> Client ID: <b>PBW</b> Prep Date: Analyte	SampT Batch Analysis D Result	ype: ME ID: C5 Pate: 8/ PQL	BLK 3346 10/2018 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 3346 757490 LowLimit	<b>8260: Volatile</b> Units: μg/L HighLimit	es Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene	SampT Batch Analysis D Result ND	ype: ME 1D: C5 Pate: 8/ PQL 1.0	3LK 3346 10/2018 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 3346 757490 LowLimit	8260: Volatile Units: μg/L HighLimit	es Short L %RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene	SampT Batch Analysis D Result ND ND	ype: <b>ME</b> n ID: <b>C5</b> pate: <b>8/</b> PQL 1.0 1.0	BLK 3346 10/2018 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 3346 757490 LowLimit	8260: Volatile Units: µg/L HighLimit	es Short L %RPD	<b>ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene	SampT Batch Analysis D Result ND ND ND	ype: ME n ID: C5 Pate: 8/ PQL 1.0 1.0 1.0	3LK 3346 10/2018 SPK value	Tes F SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 3346 757490 LowLimit	8260: Volatile Units: µg/L HighLimit	es Short L %RPD	<b>ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE)	SampT Batch Analysis D Result ND ND ND ND	ype: ME Date: 8/ PQL 1.0 1.0 1.0 1.0	3LK 3346 10/2018 SPK value	Tes F SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 3346 757490 LowLimit	8260: Volatile Units: μg/L HighLimit	%RPD	<b>.ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE) Xylenes, Total	SampT Batch Analysis D Result ND ND ND ND ND	ype: <b>ME</b> bate: <b>8/</b> PQL 1.0 1.0 1.0 1.0 1.0 1.0	3LK 3346 10/2018 SPK value	Tes F SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 3346 757490 LowLimit	8260: Volatile Units: μg/L HighLimit	%RPD	<b>ist</b> RPDLimit	Qual
Sample ID rb Client ID: PBW Prep Date: Analyte Benzene Toluene Ethylbenzene Methyl tert-butyl ether (MTBE) Xylenes, Total Surr: 4-Bromofluorobenzene	SampT Batch Analysis D Result ND ND ND ND ND ND ND	ype: <b>ME</b> bate: <b>8/</b> PQL 1.0 1.0 1.0 1.0 1.0	BLK 3346 10/2018 SPK value 10.00	Tes F SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC 116	PA Method 3346 757490 LowLimit 70	8260: Volatile Units: μg/L HighLimit 130	%RPD	<b>ist</b> RPDLimit	Qual

#### **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
- PQL Practical Quanitative Limit
- 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

Page 20 of 28

WO#: **1808649** 

05-Sep-18

Client: An Project: Re	ndeavor Bloomfield efinery Wells NBB	ł Colle	ction Wells	NBB Obs						
Sample ID 100ng Ics	SampTvi		· c	Tes	tCode: El	PA Method	8260B: VOL /			
	Samp I y	D. DE	2204	163		2204	02000. VOLA			
Bron Date:		D. KJ	13/2019	с С		3391 750330	Linite: ua/l			
Thep Date.	Analysis Da	ic. <b>0</b>	13/2010			100000	onito. <b>µg/</b> L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
loluene	20	1.0	20.00	0	99.6	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	111	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-c	9.9		10.00		98.5	70	130			
Surr: 4-Bromofluorobenze	ne 10		10.00		103	70	130			
Surr: Dibromofluorometha	ne 10		10.00		102	70	130			
Surr: Toluene-d8	9.3		10.00		92.8	70	130			
Sample ID rb	SampTy	pe: ME	BLK	Tes	tCode: El	PA Method	8260B: VOLA	TILES		
Client ID: PBW	Batch I	D: R5	3391	R	RunNo: 5	3391				
Prep Date:	Analysis Da	te: <b>8/</b>	13/2018	S	SeqNo: 1	759340	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	E) 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	0.41	10								J
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
- PQL Practical Quanitative Limit
- 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

Page 21 of 28

Andeavor Bloomfield

iic.		

Project: Refine	ery Wells NBB	Colle	ection Wells	s NBB Obs						
Sample ID rb	SampTyp	e: M	BLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch II	): <b>R</b>	53391	F	RunNo: 5	53391				
Prep Date:	Analysis Date	e: 8	/13/2018	S	SeqNo: 1	759340	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-Butvlbenzene	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-DCF	ND	1.0								
trans 1.3 Dichloropropaga		1.0								
1 2 3 Trichlorobenzene		1.0								
1.2.3 Trichlorobenzene		1.0								
		1.0								
		1.0								
		1.0								
		1.0								
		1.0								
1,2,3-Trichloropropane	ND	2.0								

#### **Qualifiers:**

**Client:** 

- \* 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
- PQL Practical Quanitative Limit
- 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

Page 22 of 28

Client:	Andeavor Bloomfield	
Project:	Refinery Wells NBB Collection Wells N	BB Obs
Sample ID rb	SampType: <b>MBLK</b>	TestCode

Sample ID rb	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES			
Client ID: PBW	Batch	n ID: R5	3391	R	RunNo: 5	3391				
Prep Date:	Analysis D	ate: 8/	13/2018	S	SeqNo: 1	759340	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	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.4		10.00		93.7	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
- PQL Practical Quanitative Limit
- 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
- Page 23 of 28

WO#:	1808	3649
	05.0	10

Client: Project:	Andeavor Refinery	Bloomf Wells NF	ield 3B Co	llection Wells	NBB Obs						
Sample ID	MB-40078	Samp	Type:	MBLK	Test	Code: El	PA Method	7470: Mercur	y		
Client ID:	PBW	Bate	ch ID:	40078	R	.unNo: <b>5</b> :	3851				
Prep Date:	8/30/2018	Analysis	Date:	8/31/2018	S	eqNo: 1	776962	Units: mg/L			
Analyte		Result	PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	(	0.000068	0.000	20							J
Sample ID	LCS-40078	Samp	Туре:	LCS	Test	Code: El	PA Method	7470: Mercur	y		
Client ID:	LCSW	Bate	ch ID:	40078	R	unNo: <b>5</b> :	3851				
Prep Date:	8/30/2018	Analysis	Date:	8/31/2018	S	eqNo: 1	776963	Units: mg/L			
Analyte		Result	PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0050	0.000	20 0.005000	0	99.6	80	120			
Sample ID	1808649-002EMS	Samp	Туре:	MS	Test	Code: El	PA Method	7470: Mercur	y		
Client ID:	MW-29	Bate	ch ID:	40078	R	unNo: <b>5</b> :	3851				
Prep Date:	8/30/2018	Analysis	Date:	8/31/2018	S	eqNo: 1	776966	Units: mg/L			
Analyte		Result	PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0051	0.000	20 0.005000	.00006800	101	75	125			
Sample ID	1808649-002EMS	) Samp	Type:	MSD	Test	Code: El	PA Method	7470: Mercur	y		
Client ID:	MW-29	Bate	ch ID:	40078	R	unNo: <b>5</b> :	3851				
Prep Date:	8/30/2018	Analysis	Date:	8/31/2018	S	eqNo: 1	776967	Units: mg/L			
Analyte		Result	PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0051	0.000	20 0.005000	.00006800	100	75	125	0.614	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
- PQL Practical Quanitative Limit
- 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

Page 24 of 28

WO#:	1808649

Client: Project:		Andeavor Bloomfi Refinery Wells NF	ield 3B Colle	ction Wells	NBB Obs						
Sample ID	MB-B	Samp	Туре: МЕ	BLK	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Bate	ch ID: <b>B5</b>	3642	F	anNo: 5	3642				
Prep Date:		Analysis	Date: 8/	22/2018	S	SeqNo: 1	769047	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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		0.10	1.0								J
Silver		ND	0.0050								
Sodium		0.29	1.0								J
Zinc		ND	0.020								
Sample ID	LCS-B	Samp	Type: I C	s	Tes	tCode: F	PA Method	6010B. Disso	lved Met	als	
Client ID:	LCSW	Bate	ch ID B5	3642	F	lunNo: 5	3642	00100.01000	ivea mea		
Prep Date:	20011	Analysis	Date: 8/	22/2018	S	SeqNo: 1	769049	Units: mg/L			
Analvte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HiahLimit	%RPD	RPDLimit	Qual
Barium		0.52	0.020	0.5000	0	104	80	120			
Cadmium		0.52	0.0020	0.5000	0	105	80	120			
Calcium		49	1.0	50.00	0	98.1	80	120			
Chromium		0.49	0.0060	0.5000	0	98.2	80	120			
Copper		0.50	0.0060	0.5000	0	99.5	80	120			
Iron		0.51	0.020	0.5000	0	103	80	120			
Lead		0.50	0.0050	0.5000	0	99.9	80	120			
Magnesium		50	1.0	50.00	0	100	80	120			
Manganese		0.49	0.0020	0.5000	0	98.7	80	120			
Potassium		50	1.0	50.00	0	99.5	80	120			
Silver		0.11	0.0050	0.1000	0	111	80	120			
Sodium		51	1.0	50.00	0	103	80	120			
Zinc		0.48	0.020	0.5000	0	95.9	80	120			
Sample ID	MB-B	Samo	Type: MF	BLK	Tes	tCode: F	PA Method	6010B: Disso	lved Met	als	
Client ID:	PBW	Bate	ch ID: B5	3717	. 03 F	RunNo: 5	3717	201021 21000			
Prep Date:		Analvsis	Date: 8/	27/2018		SeqNo: 1	772853	Units: <b>ma/L</b>			
Analyto		Popult	D()	SPK volue	SPK Pof Vol	% REC	Low/ imit	Hight imit	%DDU	RPDI imit	Qual
Arsonic				or it value		/0INEU	LOWLIIIII	i iigi i∟ii1iit	/01\F'U		Quai
Selenium		ND	0.020								
0.119											

#### 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
- PQL Practical Quanitative Limit
- 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

Page 25 of 28

Client: Project:		Andeavor Bloomfiel Refinery Wells NBE	ld 3 Colle	ection Wells	NBB Obs						
Sample ID	MB-B	SampTy	уре: М	BLK	Tes	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batch	ID: B	53717	F	RunNo: 5	3717				
Prep Date:		Analysis Da	ate: 8	/27/2018	S	SeqNo: 1	772853	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	SampTy	ype: LO	cs	TestCode: EPA Method 6010B: Dissolved Metals					als	
Client ID:	LCSW	Batch	ID: B	53717	F	RunNo: 5	3717				
Prep Date:		Analysis Da	ate: 8	/27/2018	S	SeqNo: 1	772855	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.49	0.020	0.5000	0	98.6	80	120			
Selenium		0.49	0.050	0 5000	0	98.0	80	120			
Scientani		0.45	0.000	0.0000	0	00.0	00	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
- PQL Practical Quanitative Limit
- 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
- Page 26 of 28

Client: Project:	A: Re	ndeavor Bloomfi efinery Wells NE	eld 3B Colle	ction Wells	NBB Obs						
Sample ID Client ID: Prep Date:	2.5ug gro LCSW	Ics Samp Bato Analysis	Type: <b>LC</b> :h ID: <b>A5</b> Date: <b>8/</b>	:S 3346 110/2018	Test R S	Code: El cunNo: 5 eqNo: 1	PA Method 3346 757458	8015D: Gaso	line Rang	e	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit 70	HighLimit 130	%RPD	RPDLimit	Qual
Sample ID Client ID:	2.5ug gro LCSW	Ics2 Samp Bate	Type: LC	:S 3346	Test	tCode: El	PA Method	8015D: Gasol	line Rang	e	
Prep Date:		Analysis	Date: 8/	10/2018	S	eqNo: 1	757459	Units: mg/L			
Analyte Gasoline Rang Surr: BFB	ge Organics (G	Result           iRO)         0.50           9.8	PQL 0.050	SPK value 0.5000 10.00	SPK Ref Val 0	%REC 99.3 98.0	LowLimit 70 70	HighLimit 130 130	%RPD	RPDLimit	Qual
Sample ID	rb	Samp	Type: ME	BLK	Test	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID:	PBW	Bato	h ID: A5	3346	R	unNo: 5	3346				
Prep Date:		Analysis	Date: 8/	10/2018	S	eqNo: 1	757460	Units: %Rec	;		
Analyte Surr: BFB		Result 10	PQL	SPK value 10.00	SPK Ref Val	%REC 104	LowLimit 70	HighLimit 130	%RPD	RPDLimit	Qual
Sample ID	rb2	Samp	Type: ME	BLK	Test	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Sample ID Client ID:	rb2 PBW	Samp	Type: <b>MB</b> ch ID: <b>B5</b>	3LK 3346	Test	Code: El	PA Method 3346	8015D: Gasol	line Rang	e	
Sample ID Client ID: Prep Date:	rb2 PBW	Samp Bato Analysis	Type: <b>ME</b> ch ID: <b>B5</b> Date: <b>8/</b>	3LK 3346 '10/2018	Test R S	Code: El cunNo: 5 seqNo: 1	PA Method 3346 757472	8015D: Gaso Units: mg/L	line Rang	e	
Sample ID Client ID: Prep Date: Analyte	rb2 PBW	Samp Bato Analysis Result	Type: ME th ID: B5 Date: 8/ PQL	BLK 3346 10/2018 SPK value	Test R S SPK Ref Val	tCode: El tunNo: 5 GeqNo: 1 %REC	PA Method 3346 757472 LowLimit	8015D: Gaso Units: mg/L HighLimit	line Rang %RPD	e RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB	rb2 PBW	Samp Bato Analysis Result RO) 0.020 10	Type: <b>ME</b> ch ID: <b>B5</b> Date: <b>8/</b> PQL 0.050	3LK 3346 10/2018 SPK value 10.00	Test R S SPK Ref Val	Code: El RunNo: 5: SeqNo: 1 %REC 102	PA Method 3346 757472 LowLimit 70	8015D: Gaso Units: mg/L HighLimit 130	line Rang %RPD	e RPDLimit	Qual J
Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID	rb2 PBW ge Organics (C 2.5ug gro	Samp Bato Analysis Result RO) 0.020 10 Ics Samp	Type: <b>ME</b> th ID: <b>B5</b> Date: <b>8/</b> <u>PQL</u> 0.050 Type: <b>LC</b>	3LK 3346 10/2018 SPK value 10.00	Test R SPK Ref Val Test	Code: <b>EI</b> unNo: <b>5</b> eqNo: <b>1</b> %REC 102 Code: <b>EI</b>	PA Method 3346 757472 LowLimit 70 PA Method	8015D: Gaso Units: mg/L HighLimit 130 8015D: Gaso	line Rang %RPD	e RPDLimit	Qual J
Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID Client ID:	rb2 PBW ge Organics (G 2.5ug gro LCSW	Samp Bato Analysis Result RO) 0.020 10 Ics Samp Bato	Type: <b>ME</b> ch ID: <b>B5</b> Date: <b>8/</b> PQL 0.050 Type: <b>LC</b> ch ID: <b>B5</b>	3346 3346 10/2018 SPK value 10.00	Test R SPK Ref Val Test R	Code: El SeqNo: 1 %REC 102 Code: El SunNo: 5	PA Method 3346 757472 LowLimit 70 PA Method 3389	8015D: Gaso Units: mg/L HighLimit 130 8015D: Gaso	line Rang %RPD	e RPDLimit e	Qual J
Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID Client ID: Prep Date:	rb2 PBW ge Organics (G 2.5ug gro LCSW	Samp Bato Analysis Result RO) 0.020 10 Ics Samp Bato Analysis	Type: <b>MB</b> ch ID: <b>B5</b> Date: <b>8/</b> PQL 0.050 Type: <b>LC</b> ch ID: <b>B5</b> Date: <b>8</b> /	3LK 33346 10/2018 SPK value 10.00 3389 13/2018	Test R SPK Ref Val Test R S	Code: El cunNo: 5 GeqNo: 1 %REC 102 tCode: El cunNo: 5 GeqNo: 1	PA Method 3346 757472 LowLimit 70 PA Method 3389 758838	8015D: Gaso Units: mg/L HighLimit 130 8015D: Gaso Units: mg/L	line Rang %RPD	e RPDLimit e	Qual J
Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB	rb2 PBW ge Organics (G 2.5ug gro LCSW	Samp Bato Analysis Result RO) 0.020 10 Ics Samp Bato Analysis Result Result RO) 0.52 9.5	Type: ME ch ID: B5 Date: 8/ PQL 0.050 Type: LC ch ID: B5 Date: 8/ PQL 0.050	3346 3346 10/2018 SPK value 10.00 3389 13/2018 SPK value 0.5000 10.00	Test R SPK Ref Val Test R SPK Ref Val 0	Code: El cunNo: 5: GeqNo: 1 %REC 102 tCode: El cunNo: 5: GeqNo: 1 %REC 104 95.5	PA Method 3346 757472 LowLimit 70 PA Method 3389 758838 LowLimit 70 70 70	8015D: Gaso Units: mg/L HighLimit 130 8015D: Gaso Units: mg/L HighLimit 130 130	line Rang %RPD line Rang %RPD	e RPDLimit e RPDLimit	Qual J Qual
Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB	rb2 PBW ge Organics (C 2.5ug gro LCSW ge Organics (C rb	Samp Bato Analysis Result RO) 0.020 10 Ics Samp Bato Analysis Result RO) 0.52 9.5	Type: ME ch ID: B5 Date: 8/ PQL 0.050 Type: LC ch ID: B5 Date: 8/ PQL 0.050 Type: ME	BLK 3346 10/2018 SPK value 10.00 3389 13/2018 SPK value 0.5000 10.00 BLK	Test R SPK Ref Val Test SPK Ref Val 0 Test	tCode: El seqNo: 1 %REC 102 tCode: El sunNo: 5 seqNo: 1 %REC 104 95.5	PA Method 3346 757472 LowLimit 70 PA Method 3389 758838 LowLimit 70 70 PA Method	8015D: Gasol Units: mg/L HighLimit 130 8015D: Gasol Units: mg/L HighLimit 130 130 8015D: Gasol	line Rang %RPD line Rang %RPD	e RPDLimit e RPDLimit	Qual J Qual
Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID Client ID:	rb2 PBW ge Organics (C 2.5ug gro LCSW ge Organics (C rb PBW	Samp Bato Analysis Result RO) 0.020 10 Ics Samp Bato Analysis Result RO) 0.52 9.5 Samp Bato	Type: ME ch ID: B5 Date: 8/ PQL 0.050 Type: LC ch ID: B5 Date: 8/ PQL 0.050 Type: ME ch ID: B5	3346 3346 10/2018 SPK value 10.00 3389 13/2018 SPK value 0.5000 10.00 3LK 3389	Test R SPK Ref Val Test SPK Ref Val 0 Test R	Code: El cunNo: 5: GeqNo: 1' %REC 102 Code: El cunNo: 5: GeqNo: 1' %REC 104 95.5 Code: El cunNo: 5:	PA Method 3346 757472 LowLimit 70 PA Method 3389 758838 LowLimit 70 70 PA Method 3389	8015D: Gaso Units: mg/L HighLimit 130 8015D: Gaso Units: mg/L HighLimit 130 130 8015D: Gaso	line Rang %RPD line Rang %RPD	e RPDLimit e RPDLimit	Qual J Qual
Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID Client ID: Prep Date:	rb2 PBW ge Organics (G 2.5ug gro LCSW ge Organics (G rb PBW	Samp Bato Analysis Result (RO) 0.020 10 Ics Samp Bato Analysis Samp Bato Analysis	Type: ME ch ID: B5 Date: 8/ PQL 0.050 Type: LC ch ID: B5 Date: 8/ Type: ME ch ID: B5 Date: 8/	BLK 3346 10/2018 SPK value 10.00 SS 3389 13/2018 SPK value 0.5000 10.00 BLK 3389 13/2018	Test R SPK Ref Val Test R SPK Ref Val 0 Test R S	tCode: El tunNo: 5: teqNo: 1' %REC 102 tCode: El tunNo: 5: teqNo: 1' tCode: El tunNo: 5: tcode: El tunNo: 5:	PA Method 3346 757472 LowLimit 70 PA Method 3389 758838 LowLimit 70 70 PA Method 3389 758839	8015D: Gasol Units: mg/L HighLimit 130 8015D: Gasol Units: mg/L HighLimit 130 130 8015D: Gasol Units: mg/L	line Rang %RPD line Rang %RPD	e RPDLimit e RPDLimit	Qual J Qual
Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID Client ID: Prep Date: Analyte	rb2 PBW ge Organics (C 2.5ug gro LCSW ge Organics (C rb PBW	Samp Bato Analysis Result Ro) 0.020 10 Ics Samp Bato Analysis Result Ro) 0.52 9.5 Samp Bato Analysis Result	Type: ME ch ID: B5 Date: 8/ PQL 0.050 Type: LC ch ID: B5 Date: 8/ PQL 0.050 Type: ME ch ID: B5 Date: 8/ PQL	3346 3346 10/2018 SPK value 10.00 3389 13/2018 SPK value 0.5000 10.00 3LK 3389 13/2018 SPK value	Test R SPK Ref Val Test SPK Ref Val 0 Test R SPK Ref Val SPK Ref Val	tCode: El seqNo: 1 %REC 102 tCode: El seqNo: 1 %REC 104 95.5 tCode: El sunNo: 5 seqNo: 1 %REC	PA Method 3346 757472 LowLimit 70 PA Method 3389 758838 LowLimit 70 70 PA Method 3389 758839 258839 LowLimit	8015D: Gasol Units: mg/L HighLimit 130 8015D: Gasol Units: mg/L HighLimit 130 130 8015D: Gasol Units: mg/L HighLimit	line Rang %RPD line Rang %RPD	e RPDLimit e RPDLimit	Qual J Qual

#### **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

- PQL Practical Quanitative Limit
- 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

Page 27 of 28

Client: Project:		Andeavor Bloomfield Refinery Wells NBB C	ollection Wells	NBB Obs						
Sample ID	mb-1 al	k SampType	BLK	Tes	tCode: SN	/12320B: Al	kalinity			
Client ID:	PBW	Batch ID:	R53511	R	anNo: <b>53</b>	3511				
Prep Date:		Analysis Date:	8/16/2018	S	SeqNo: 17	63637	Units: mg/L	CaCO3		
Analyte	(as CaCO	Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	(03 0000									
Sample ID	Ics-1 al	c SampType	LCS	Tes	tCode: SN	/12320B: Al	kalinity			
Client ID:	LCSW	Batch ID:	R53511	R	lunNo: <b>53</b>	8511				
Prep Date:		Analysis Date:	8/16/2018	S	GeqNo: 17	63638	Units: mg/L	CaCO3		
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO	3) 79.48 20	0.00 80.00	0	99.4	90	110			
Sample ID	mb-2 al	k SampType	MBLK	Tes	tCode: SN	/12320B: Al	kalinity			
Client ID:	PBW	Batch ID:	R53511	R	unNo: <b>53</b>	3511	·			
Prep Date:		Analysis Date:	8/16/2018	S	SeqNo: 17	763661	Units: mg/L	CaCO3		
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO	3) ND 20	).00							
Sample ID	lcs-2 al	s SampType	: LCS	Tes	tCode: SN	/12320B: Al	kalinity			
Client ID:	LCSW	Batch ID:	R53511	R	unNo: <b>53</b>	8511				
Prep Date:		Analysis Date:	8/16/2018	S	SeqNo: 17	763662	Units: <b>mg/L</b>	CaCO3		
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO	3) 80.12 20	0.00 80.00	0	100	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
- PQL Practical Quanitative Limit
- 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
- Page 28 of 28

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental . Albu TEL: 505-345-3975 Website: www.hau	Analy 490 querq FAX: llenvit	sis Laboratory 11 Hawkins NE 1ue, NM 87109 505-345-4107 ronmental.com	Sam	ple Log-In Check List
Client Name: ANDEAVOR BLOOMFIEL	Work Order Number:	180	8649		RcptNo: 1
Received By: Anne Thorne	8/10/2018 8:10:00 AM		L	Ione In-	
Completed By: Anne Thorne	8/10/2018 8:35:31 AM		4	Ione A-	
Reviewed By: VVZOB/10/18 Labered by! A-08/10/1	X				
Chain of Custody					
1. Is Chain of Custody complete?		Yes		No 🗀	Not Present
2. How was the sample delivered?		Cou	<u>rier</u>		
3. Was an attempt made to cool the samples?		Vac	$\checkmark$	No 🗌	
· · · · · · · · · · · · · · · · · · ·		103			
4. Were all samples received at a temperature of	of >0° C to 6.0°C	Yes		No 🗌	NA 🗌
5. Sample(s) in proper container(s)?		Yes		No 🗌	
6. Sufficient sample volume for indicated test(s)	?	Yes		No 🗆	
7. Are samples (except VOA and ONG) properly	preserved?	Yes		No 🗌	
8. Was preservative added to bottles?		Yes	1	No 🗹	NA 🗌
9. VOA vials have zero headspace?		Yes		No 🗌	No VOA Vials
10. Were any sample containers received broken	?	Yes		No 🗹 🛛	
					# of preserved
11. Does paperwork match bottle labels?		Yes		No 🗌	for pH:
(Note discrepancies on chain of custody)					(S) or >12 unless noted)
12. Are matrices correctly identified on Chain of C	ustody?	Yes		•• ∐	Adjusted?
13. Is it clear what analyses were requested?		Yes		No 🛄	and A solution
<ol> <li>Were all holding times able to be met? (If no, notify customer for authorization.)</li> </ol>		Yes		No 🗆 📘	
Special Handling (if applicable)					

15.1	Was client notified of all o	liscrepancies with this order?	Yes	No 🗌	NA 🗹
	Person Notified:		Date	aldet het hiere beskende staat het het het het het het het setter anter en te setter en te setter en te setter	
	By Whom:		Via: 🔄 eMail 🗌	Phone 🗌 Fax 📋 I	In Person
	Regarding:				
	Client Instructions:	l			

16. Additional remarks:

CUSTODY SEALS INTACT ON ALL SAMPLE BOTTLES, PER TP 1 REPORT/at 8/10/18

### 17. Cooler Information

1	1.0	Good	Yes		
Cooler No	Temp °C	Condition	Seal Intact	Seal No Seal Da	te Signed By

Lim: Around Time:       X standard       Rush         Yolget Name: Refinery Wells       Plaus       Analysis       Analy	7
Um-Around Time:     Nall File       X Standard     Rush       Yoject Name:     Refinery Wells       Project Name: <td></td>	
Turn-Aound Time:     X Standard     Rush       X Standard     Rush       Analysis     Analysis       Project Name:     Refinery Wells       Project Name:     Project Name       Project Name:     Project Name       Project Na	
Turn-Around Time:     X standard     RMALYSIS LAB       Yeller:     ANALYSIS LAB       Project Name:     Refinery Wells       Project Name:     Prover Name       Project Name:     Proper Name	
Turn-Around Time:     X Standard     Itur-Around Time:       X Standard     Refinery Wells       Project Name:     Refinery Mells	
Turn-Around Time:     X Standard     Turn-Around Time:       X Standard     Rush       Anal YSIS       Project Name:     Refinery Wells       Date:     Secondard     Rush       Date:     Secondard     Rush       Date:     Secondard     Rush       Date:     Secondard     Rush       Diget Name:     Refinery Wells       Date:     Secondard     Rush       Diget Name:     Refinery Wells       Diget Name:     Refinery Wells       Dist     Project # Annual Event       Project # Annual Event     Aburdure       Project # Ranager:     Annual Event       Prove     Bartex+MIBE+TMB's foral       Prove     Sample       Tack Pand       Pro	
Turn-Around Time:     Turn-Around Time:       X Standard     Rush       Project Name: Refinery Wells     Now.hallenv.       Project Manager: Annual Event     ANALYS       Project Manager: Allen Hains     Project Manager. Allen Hains       Project Manager: Allen Hains     Project Manager. Allen Hains       Project Manager: Allen Hains     Project Manager. Allen Hains       Project Manager. Allen Hains     Project Manager. Allen Hains       Project Manager. Allen Hains     Project Manager. Allen Hains       Project Manager. Allen Hains     Project Manager. Allen Hains       Project Manager. Allen Hains     Project Manager. Allen Hains       Project Manager. Allen Hains     Project Manager. Allen Hains       Project Manager. Allen Hains     Project Manager. Allen Hains       Project Manager. Allen Hains     Project Manager. Allen Hains       Project Manager. Allen Hains     Proventive       Proje	
Turn-Around Time:     Anticlum Around Time:       Turn-Around Time:     X Standard     Rush       Project Name:     Refinery Wells       Project Manager:     490 Hawkins NE       Project Manager:     Antile       Propert Manager:     Antile       Propert Manager:     Antile       Propert Manager:     Antile       Proto     Antile       Proto	
Turn-Fround Time:     X Standard     Rush       Project Name:     Refinery Wells       Project Name:     Refinery Wells       Project Name:     Refinery Wells       Project #:     4901 Hawkins       Project #:     4901 Hawkins       Project #:     4901 Hawkins       Project #:     700 Hawkins       Project #:     815 Hawkins       Project #:     815 Hawkins       Project #:     815 Hawkins       Project #:     815 Hawkins       Project #:     815 Hawkins       Project #:     815 Hawkins       Project #:     815 Hawkins       Project #:     815 Hawkins       Project #:     816 Hamkins	
Turn-Around Time:     Lurn-Around Time:       X Standard     Rush       Project Name: Refinery Wells       Project Name: Refinery Wells       Project Name: Refinery Wells       Project Manager: Manual Event       Project #: Annual Event       Project #: Annual Event       Project #: Annual Event       Project Manager: Allen Hains       Project Manager: Allen Hain	
Turn-Around Time:     X Standard     Rush       X Standard     Rush     400       Project Name: Refinery Wells     Project Name: Refinery Wells       Date:     2. 8 /8.       Project Manager: Annual Event     400       Project Manager: Annual Event     12623266       Project Manager: Allen Hains     No       Project Manager: Alle	
Turn-Around Time:     Xstandard     Rush       X Standard     Rush       Project Name:     Refinery Wells       Project Name:     Refinery Wells       Project Name:     Refinery Wells       Project Namager:     Annual Event       Project Manager:     Allen Hains	
Turn-Around Time:       X Standard       Project Name: Refinery Wells       Project Name: Refinery Wells       Date:       Ø:       Project # Annual Event       Project # Annual Event       Project Manager: Allen Hains       Patie I       Patie       Patie       Patie       Patie       Patie       Patie       <	
Turn-Around Time:       X Standard     Rush       Project Name:     Relinery Wells       Project Name:     Refinery Wells       Date:     8-8-8       Project Namager:     Annual Event       Project #: Annual Event     Annual Event       Pointe:     8-8-8       Project Manager:     Allen Hains       Project Manager:     Annual Event       Pointe:     8-8-8       Sample:     7 Yes       Project Manager:     No       Sample:     7 Yes       Project Manager:     Allen Hains       Pointe:     7 Yes       Pointe:     7 Yes       Pointe:     7 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes       Pointe:     1 Yes	
Turn-Around Time:       X Standard     Rush       X Standard     Rush       Project Name:     Refinery Wells       Date:     8.8.6       Date:     8.8.6       Project #: Annual Event       Project #: Annual Event       Poll 12623266       Di loe:     X Yes       Di loe:     X Yes       Sample:     Tracy Payne       Di loe:     X Yes       Domi VOA-5     HCI       Progent VOA-5     HCI       250 ml     No3       Diastic-1     No3       Plastic-1     Neat       Plastic-1     Neat       Plastic-1     Na4       Scon ml     Na4	0/0/
Turn-Around Time:       X Standard     Rush       X Standard     Rush       Project Name:     Refinery V       Project Name:     Refinery V       Project Name:     Refinery V       Project Manage     Refinery V       Pattic-1     No3       Plastic-1     No3       Plastic-1 <t< td=""><td></td></t<>	
Turn-Around Time:       X Standard       Project Name: Refin       Project Manager: All       Project Manager: All <t< td=""><td>/</td></t<>	/
Turn-Around         X         Standard         X         Standard         Project Name:         Project Name:         Project Name:         Project Name:         Project Name:         Project Manage         Polstic-1         Plastic-1	
Turn-Aro Turn-Aro Sampler Noject No	
	1
	_
ermi 	
Multiple         Multiple	ž
	2 5
Alternative EXCE	
Andea Andea ackage: fime: fime: fime: fime: fime: fime:	2
Client: Cl	

		.≻								(N	JO	Y) :	səlddu	Air Bi										tes.		]
Ø		N N					<sup>z</sup> 0	28/	(jiui	ije>	II∀	- 'I	nədə	.nsව						×				Analy		
٩	Z	Ē		თ					SL	ioi	u∀́	ר י <b>ו</b>	Chen	.n9Đ					×	×				jet ∧		
2	Σ	2		8710	107					s	ilet	9M	pəvic	Dissi				×						ar ar		
· •	Z		COM	ΜN	45-41	st				(	AC	)/\-! /\-	me2)	0278	2							-+		and		
	ŭ	2	ental	rque,	05-3	edne	S.	BOG	1 28	08	/ Sa	e v v Spice	Diteation Divide	1808	^									spo		
	Σ	ួល	onme	Ianer	ax 5	sis R	(*	OS'*	04	ZON	1, <sub>6</sub> C	DN'I		NoinA						<u> </u>			:	letho		
	Z	Š	lenvir	Albu	۲.	nalys			lei	οT	S	eta	M 8 A	หวห			×							∑ Sul ≤		
		Į	v.hal	Ч И И	975	A		(5	SMIS	S02	28	or	0168)	НАЧ									;	alytic		
		Z	M	kins	345-3				(	(l`t	205	ро	(Meth	EDB					<u> </u>					Ans		
				Haw	505-3		(0)			(1)8	314		(Metho	HdT										See		
				4901	Tel.		0) (/	aw/	021 SPO		)원( 	אופ +קר	3    V +) 3 2 1 08		×	×				ļ		_		irks:		
				•				(12(	)8)s	.8V	NT-	+36	110+)									+		Rema		
ſ												'		· .	2	22	N	8	6	Ц				·~~		1
													Z	i o	$\beta$	q	φ	9	4	ğ						)
														5										<sub>10</sub> Üe	2	š )
			ells				ns				No	Ó,	Ξ												See .	
		sh	ΥŇ	2	, ut		Hai			ayne		/-	ø									$\vdash$		<u>م</u>	$+\gamma$	
		] Ru	iner	<del>o</del>	Шщ		llen			Ч Р	S	re:	ervativ	ype	CI	eat	ş	စ္နို	S0₄	eat				لملا		
	ime:		Ref	တ	nual	266	jer: A			Trac	¥Х	eratu	Prese	É.	Т	Z	Î	ŢΞ	H <sup>2</sup>	Ž				3		)
	L pun	lard	ame:	•	An	623	lanaç					emp	er	# 7	A-5	- 5	- 7	- 7		- 7				× -4		Ś
	-Aro	Stanc	ect N		ect #	# 12	ect N			ipler:	 Se	ple T	ntain	e an		50 m nber	50 m astic	25 m astic	25 m astic	00 m astic			1		ived b	X
	Tur	×	Proj	Date	Proj	Ğ	Proj			San	ő	San	ပိ	ц Ц	40m	ar ar				ν ä						
							ы		(uoj					פ												
	<u>p</u>	inal			_		or.c		alidat				to di	1001											i	
	ec	erm			741		leav		ull <8						N-29											
	22	ld T			M M		And		4 (F				1 alo	- 2	M										ĮΣ	
	Ó	mfie		06	ч, Г	483	ins@		-evel				me											. (		,
	ust	3100		R 49	nfiel	34-1	S.Ha		×															ĔΛΓ	hed by	
1	Ÿ	or - E		20 C	loon	15-5	llen.				<b>N</b>		Aatriv		$H_2O$					┨			-			ž
	2	eavo		SS:		Ó	A 	je			- - -				Q							┝╌╍┝		<u>ř</u>	× ×	╞
	hai	And		Addre		<u></u>	Fax	acka	dard	_	(Typ		Ë		16					┢			i	133	Time:	
I	Ū	ient:		ailing		ione f	ail or	VQC F	Stan	Othe	EDD		)ata		yle.									<u>ا</u> ق ک	lte: // c	
		อิ		Ň		6	en	ð			×			L	3								ļ	<sup>s</sup> õ	200	1

$\sigma$		ORY							(N	01	<u>ک</u> ) :	Air Bubbles					 					
Ч		Ě		თ												 						
ŝ	Z	20	_	8710	107					(\40		11190) 0170			 		 					
· . 1	20	59	l.com	NN	345-4	est	۸Įu	o 3811	N 'X		3 (A	OV) 80928	X	<b></b>					 			
		בי	nenta	erdne	505-3	Requ	S,	2 PCB	808	/ S	əpic	itseg 1808										
			vironn	nbnc	Fax	sis l	¢)	0S'*Oc	1' <sup>2</sup> 0	N <sup>°®</sup> (	DN'I	O, A) enoinA										
	Ĩ	Ľ	allen	- All	10	Anal		(		5	etale	N 8 ARDA					 					
		Į	ww.h	S NE	-3975			(SW	IS0	728 728	2 DC 5	0158) HAG										
	Ī	2	M	wkin	5-345				()	811	p pc	HqtaM) Hqt							 <u> </u>			
		7 [7]		)1 Ha	I. 505		(Ajuc	DED	атха	3 05	10) (	TPH 8015E		×								
				49(	Те		λ)	lno se	9)⊢	ЧΤ	+36	BTEX+MT8								narks		
r								(1208)	)s'B	MT	3E+	BTEX+MTE				 				Rer	-	
			ction Wells				IS			No	¢	HEAL NO. SORL49	602	502	- -					Date Time	Bate Time	201
	ime.	🗆 Rush	NBB - Colle	8-9-18	nual Event	266	jer: Allen Hair		Tracy Payne	🔏 Yes 🛛 🗆	erature: //	Preservative Type	HCI	Neat						1 10 L 8		
	Turn-Around 1	X Standard	Project Name:	Date:	Project #: An	PO# 12623;	Project Manaç		Sampler:	On Ice:	Sample Temp	Container Type and #	40ml VOA-5	250 ml amber-1						Received by:	Received by	
	ustody Record	<b>Bloomfield Terminal</b>		R 4990	nfield, NM 87413	34-1483	S.Hains@Andeavor.com	X Level 4 (Full Validation)				Sample Request ID	CW 0+60							hed by:	thed by:	5
	-of-CI	avor - E		is: 50 Cl	Bloon	915-5;	Allen.5			EXCE		Matrix	H <sub>2</sub> O	•						Relinquis	Relinquis	
	hain	Ande		) Addres		#:	or Fax#:	Package ndard	er	(Type)		Time	800							Time:		2
		Client:		Mailing		Phone	email c	QA/QC □ Stai		X EDC		Date	81/18					.		Date:	Date:	11/1/1

	_	, <b>≿</b>							(N	Y or I	) s <u>əldd</u> u8 זi∕	/							rtes.		
6		ŠÖ						<b>V</b> tinile	AIK	m	General Che	)							\nal}		
Ъ	Ż	Ī		6			20	ງວ໓ຂຕ	oin	Am	General Che					ļ			Jet ∕		
7	ž	Ř		8710	107					() () () () () () () () () () () () () (	V bevlozziQ					<u> </u>			Tar	÷	
	2		COM	ΣZ	42 45	st	┟	INO 3	192		-ime2) 0728						<u> </u>		- Pu	2	
	Ē	5	ental.	due.	05-3.	ənbə	S.	<u>г 🧟</u>	<u>×</u> 2	<u>ບອ່</u>									ds §		
	5	S S	onme	Iquer	ax. ax.	is R	(†	05'*0	1, <u>s</u> O	N' <sup>®</sup> ON	l,iO,∃) anoinA	,					<u> </u>		etho		
		Ś	envir	Albu	ü	lalys		ľ	eto]	l slb	PCRA 8 Met										
			/.hall	, Ц	975	Ar		(SN	IS0	7 <b>28 1</b>	o 0168) HA9								<u></u>		
		Ż	M	ins N	45-39				(٢.	409 R	EDB (Metho								Ana		
				Hawk	05-3				(1.	814 k	TPH (Method								) še		
				901 +	el 5		(	0	JO/		-82108 H91		Х	 					-0 ;;		
				4			vjuo	(Gas, 200)		L + 38									- marl		
					r—		1114	(08) si		_ + =1 				 						<u>-</u>	
	ά	□ Rush		- <mark></mark>	al Event	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Allen Hains		icy Payne	(es II No	Type	CI COL	EAT TUY						Bate Time	Date Time Date Time 03/10/17 0810	
	-Around Tim	tandard	sct Name:	00	ect #: Annu	<b># 1262326</b>	ect Manager:		pler: Tra	iei IV	ntainer Pre	יד ניד	DER-1 N						red by:	led by JULY	
	Turn	×	Proje	Date	Proje	ЪÖ	Proje		Sam	On to	Type	40	AM AM						Receiv		Þ
	ustody Record	sloomfield Terminal		R 4990	nfield, NM 87413	34-1483	S.Hains@Andeavor.com	X Level 4 (Full Validation)			Sample Request ID	FTELD BLANK #3	4						.kq faat		
	-of-C	avor - E		s: 50 CI	Bloon	915-5:	Allen.S			EXCE	Matrix	H20	$\rightarrow$						Relinquist	Kelinquist	2
	hain	Ande		) Addres		#:	or Fax#:	Package: 1dard	er	(Type)	Time	0825	$\rightarrow$		_				Time: 12.2. i	1.0.01 Time:	
		Client:		Mailing		Phone	email c	QA/QC	⊡ Otř	X Edi	Date	84/15	$\rightarrow$						Date:	VIC Date: 8/9/1/8	

or Ø	MENTAL	RATORY	,	7109	70				(N	0	<u>ک</u> :	səlddu <u>B</u> iA										get Analytes.		
וא			com	NM 8	45-41(	st			1124		) //-!	mə2) 0728	۲						 			d Tar		
	ă	25	ental.	due,	05-37	ənbə	Alu-			16			<u> </u>						 	_	_	s an		
	2	្ត	onme	Iduer	ax 5	is R	(*(	DO4,50	' <sup>z</sup> OI	/ <u>°</u> V' <sup>©</sup> (	DN'I	0,3) anoinA						 				thod		
	2	i ÿ	envir	Albu	<u>Ľ</u>	nalys				s	lete	8 АЯ <b>Э</b> Я				<u>.</u>						il Me		
	-	ĬČ	v.hall	Ч	975	AI		(SMI	S0.	728	or i	0168) HA9										lytica		
		Ż	M	kins N	45-3				(1.	¥٥٩	; po	EDB (Meth										Anal		
				Haw	505-3		1		(1.	811	7 pc	TPH (Meth						 			 	See		
				1901	Tel		(Q) (()			יצכ	9) 8 		X	×			_				 	rks:		
				ч	-		· (//	(1709)	лн s.gi	at VII	+=\ +=\								 	_	 _	tema		
[			ŝ					(1000)	•,ai	<u>і</u> .		ITM. VITG	ŝ	5				 			 	<u>у к</u>		-
			bservation Wel	18	ıt		Hains		/ne	DN0		НЕАL NO. 1808649	22	.02								Pate Time	B/10/18	0110
	Time:	🗆 Rush	S NBB - OI	<u>8-9-</u>	inual Even	3266	ger: Allen I		Tracy Pay	A Yes	perature:	Preservative Type	НСІ	Neat								4(2) 24	L'	
	Turn-Around	X Standard	Project Name	Date:	Project #: An	PO# 12623	Project Mana		Sampler:	On Ice:	Sample Tem	Container Type and #	40ml VOA-5	250 ml amber-1								Received by:	Received by:	L (N
	Sustody Record	<b>Bloomfield Terminal</b>		CR 4990	mfield, NM 87413	534-1483	.S.Hains@Andeavor.com	X Level 4 (Full Validation)		EL		ix Sample Request ID	OW 25+70	-								lished by:	Jished by:	m ne
	-of-C	avor -		s: <b>5</b> 0 (	Bloo	915-{	Allen			EXC		Matri	H₂C	<b>→</b>					 			Kelingu	Relingu	5
	hain	Ande		Addres		÷.	r Fax#:	<sup>&gt;</sup> ackage dard	Ļ	(Type)		Time	1130									тіте:   9,3 (		n/ 11
	ပ	Client:		Mailing		Phone +	email or	QA/QC F	□ Othe	X EDD		Date	8.9.18		1							Date: <b>B.4. iD</b>	Date:	81/L

ø		: Å							(N -	ю X)	Air Bubbles										lytes.		
ר ש	Ę	ļ	•				7 C	) 	oinA - Alk	ma	General Ch 										t Ana		
. ^	Ľ	i Ş		109	~				s	etəN	Dissolved										arge		
9	2	Ō	шo	IN 87	410		- 1	K7N0	, ( <b>1</b>	ίον.	imə2) 07 <u>5</u> 8										d T		
	Õ	) <b>K</b>	ital.c	ne n	5-345	Ines	1/1	1914	ע≡א	<b>-9</b> (v	40V) 80828	X			X				$\Box$	$\Box$	s an		
		5	nmen	nerqı	- 20°	s Rec	s,	S PCB	808 /	səp							•	ļ			thod		
	Z	l S	nvirol	Albug	Fa, j	alysis	(*	'0S''0d		°ON sign	IO.7) snoinA					<u> </u>					Me		
	-	בו	halle	· ·	75	Ana		(SM	IS02	28 nc		~									rtical		
		¦₹ Z	ww.	ns NE	5-39				(1.4	09 P	EDB (Metho			<u>.</u>					┝──┤	$\left  \right $	haly		
	I	<	-	awkii	5-34		-		(1.8	14 b	odtəM) H9T										ee A		
		1 []		01 H	el. 50		(g	<b>2</b> /02	IQ/		83108 H9T	獭	Х								S S		
				49	Ē		(juo	seð)	-IGT	+ 38	TM + Xətə	I &	•				-				mark		
ſ							(12	208) s'E	TMF	+ 38 	тм + хэта Т					<b>_</b>				$\left  - \right $	Rei	·	-
1											EAL No.	7206	2010		102-					Ē	te Time 79/kc [33]	le Time	
		tush		-18	vent		en Hains		Payne	N I	ltive		נ							d		Da Da	
	I Time:		e:	6- 9	nnual E	3266	ager: <b>Alle</b>		Tracy	Derature.	Preserva	HC	NEN.		HCI						h al		•
	Turn-Around	X Standard	Project Nam	Date:	Project #: A	PO# 1262	Project Man		Sampler:	Sample Ten	Container Type and #	40 ML VOA-S	250 ML		40 ML						Received by:	Received by:	
	ody Record	nfield Terminal		90	1, NM 87413	183	ns@Andeavor.com	evel 4 (Full Validation)			ample Request ID	PLICATE #3	7		ZIP BLANK						l	h/2 (	
	lst	100		3 49	ıfiek	4-1	î.Hai	×			s S	Á			۴						§∕.€	ed by:	
	-of-Cl	Ivor - B		50 CF	Bloom	915-53	Allen.S				Matrix	Н, О	$\rightarrow$		Hz0						Relinquist	Retinguist	
	hain-	Andea		Address		#: 	r Fax#:	Package: dard		- (adku) -	Time	1	<b>→</b>		١					i	Time:	Time:	
	S	Client:		Mailing		Phone	email o	QA/QC			Date	81/2/3	$\rightarrow$		8/4/18					ļ	Date: 54/18	$g_{\beta_{\ell_{\xi}}}^{\text{Date:}}$	

# TABLE 2 Analytical Methods and Target Analytes Facility-Wide Groundwater Monitoring Plan - June 2014 Western Refining Southwest, Inc. - Bloomfield Terminal

VOCs (EPA Method 8260B) <sup>(1)</sup>	
- Target List	
Benzene	
Toluene	
Ethvlbenzene	
Xvlenes	
Methyl tert butyl ether (MTBE)	
SVOCs - (EPA Method 8270)	
- Method List	
TPH-GRO (EPA Method 8015B)	
- Gasoline Range Organics	
TPH-DRO (EPA Method 8015B)	
- Diesel Range Organics	
- Motor Oil Range Organics	
Total Carbon Dioxide (Laboratory Calculated)	
- Dissolved CO2	
Specific Conductivity (EPA Method 120.1 or field measureme	ent)
- Specific conductance	
TDS (EPA Method 160.1 or field measurement)	
- Total dissolved solids	
General Chemistry - Anions (EPA Method 300.0)	
Fluoride	
Chloride	
Bromide	
Nitrogen, Nitrite (as N)	
Nitrogen, Nitrate (as N)	
Phosphorous, Orthophosphate (As P)	
Sulfate	
General Chemistry - Alkalinity (EPA Method 310.1)	
Alkalinity, Total	
Carbonate	
Bicarbonate	

Total Recoverable Metals (EPA	A Method 6010B/7470)
- Target List (not applicable to R	iver Terrace Sampling Events)
Arsenic	Lead
Barium	Mercury
Cadmium	Selenium
Chromium	Silver
- Target List (for River Terrace S	Sampling Events Only)
Lead	
Mercury (DW-1 ONL	.Y)
<b>Dissolved Metals (EPA Method</b>	1 6010B / 7470)
- Target List (for Refinery Comp	plex, Outfalls, and River)
Arsenic	Manganese
Barium	Mercury
Cadmium	Potassium
Calcium	Selenium
Chromium	Silver
Copper	Sodium
Iron	Uranium
Lead	Zinc
Magnesium	

TPH = total petroleum hydrocarbons GRO = gasoline range organics VOCs = volatile organic compounds DRO = diesel range organics TDS = total dissolved solids

#### NOTES:

Ĺ

- 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 Piezomenter Wells only, per the River Terrace Bioventing System Monitoring Plan.

Western Refining Southwest, Inc. Bloomfield Terminal



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

September 05, 2018

Allen Hains Andeavor Bloomfield 111 CR 4990 Bloomfield, NM 87413 TEL: (915) 534-1483 FAX

RE: 8-9-2018 San Juan River Bluff NBB Observation and Collecti OrderNo.: 1808728

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/11/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0901

Sincerely,

and

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

### Lab Order 1808728

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield				Client Sample ID: East Outfall #3							
Project: 8-9-2018 San Juan River Bluff NBB Obs				Collection Date: 8/9/2018 2:10:00 PM							
Lab ID: 1808728-001	Matrix:	AQUEOUS	Re	Received Date: 8/11/2018 10:30:00 AM							
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID			
EPA METHOD 300.0: ANIONS							Analyst: MRA				
Fluoride	0.16	0.030	0.10		mg/L	1	8/14/2018 4:28:51 PM	R53448			
Chloride	3.1	0.029	0.50		mg/L	1	8/14/2018 4:28:51 PM	R53448			
Bromide	0.041	0.027	0.10	J	mg/L	1	8/14/2018 4:28:51 PM	R53448			
Phosphorus, Orthophosphate (As P)	0.33	0.093	0.50	JH	mg/L	1	8/14/2018 4:28:51 PM	R53448			
Sulfate	44	4.1	10		mg/L	20	8/14/2018 4:41:43 PM	R53448			
Nitrate+Nitrite as N	0.48	0.27	1.0	J	mg/L	5	8/14/2018 5:20:17 PM	R53448			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000060	0.000038	0.00020	J	mg/L	1	8/31/2018 11:22:14 AM	40078			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000064	0.000038	0.00020	JFiltere	d mg/L	1	8/31/2018 11:24:31 AM	40078			
EPA METHOD 6010B: DISSOLVED ME	TALS						Analyst: pmf				
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 6:31:54 PM	B53717			
Barium	0.065	0.00049	0.020		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Calcium	36	0.031	1.0		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Iron	ND	0.010	0.020		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Lead	ND	0.0050	0.0050		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Magnesium	6.2	0.011	1.0		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Manganese	0.0013	0.00015	0.0020	J	mg/L	1	8/22/2018 5:38:36 PM	B53642			
Potassium	1.8	0.075	1.0		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 5:59:16 PM	B53717			
Silver	ND	0.0010	0.0050		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Sodium	18	0.26	1.0		mg/L	1	8/22/2018 5:38:36 PM	B53642			
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 5:59:16 PM	B53717			
Zinc	0.056	0.020	0.020		mg/L	1	8/22/2018 5:38:36 PM	B53642			
EPA 6010B: TOTAL RECOVERABLE	METALS						Analyst: ELS				
Arsenic	ND	0.011	0.020		mg/L	1	8/15/2018 10:45:16 AM	39790			
Barium	0.065	0.020	0.020		mg/L	1	8/15/2018 10:45:16 AM	39790			
Cadmium	ND	0.00099	0.0020		mg/L	1	8/15/2018 10:45:16 AM	39790			
Calcium	36	0.020	1.0		mg/L	1	8/15/2018 10:45:16 AM	39790			
Chromium	ND	0.0011	0.0060		mg/L	1	8/15/2018 10:45:16 AM	39790			
Copper	0.0024	0.0010	0.0060	J	mg/L	1	8/20/2018 12:03:45 PM	39790			
Iron	0.15	0.0067	0.050		mg/L	1	8/15/2018 10:45:16 AM	39790			
Lead	ND	0.0050	0.0050		mg/L	1	8/15/2018 10:45:16 AM	39790			
Magnesium	6.2	0.10	1.0		mg/L	1	8/15/2018 10:45:16 AM	39790			

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

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

- 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 Page 1 of 22
- P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Lab Order **1808728** Date Reported: **9/5/2018** 

CLIENT: Andeavor Bloomfield			Client	Sample	e <b>ID:</b> East	t Out	fall #3			
<b>Project:</b> 9.0.2018 San Juan Diver Dluff NDD Obs				Collection Data: 8/0/2018 2:10:00 DM						
<b>1 I ID</b> 1000 <b>7</b> 00 001					2010	2.10.0011				
Lab ID: 1808/28-001	Matrix:	AQUEOUS	Ree	ceived I	8 10:30:00 AM					
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID		
EPA 6010B: TOTAL RECOVERABLE						Analyst: ELS				
Manganese	0.0053	0.00021	0.0020		mg/L	1	8/15/2018 10:45:16 AM	39790		
Potassium	1.6	0.061	1.0		mg/L	1	8/15/2018 10:45:16 AM	39790		
Selenium	ND	0.024	0.050		mg/L	1	8/15/2018 10:45:16 AM	39790		
Silver	ND	0.0018	0.0050		mg/L	1	8/15/2018 10:45:16 AM	39790		
Sodium	17	0.16	1.0		mg/L	1	8/15/2018 10:45:16 AM	39790		
Uranium	ND	0.029	0.10		mg/L	1	8/20/2018 12:03:45 PM	39790		
Zinc	ND	0.0033	0.020		mg/L	1	8/20/2018 12:03:45 PM	39790		
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF			
Benzene	ND	0.17	1.0		µg/L	1	8/15/2018 3:15:56 PM	X53468		
Toluene	ND	0.17	1.0		µg/L	1	8/15/2018 3:15:56 PM	X53468		
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/15/2018 3:15:56 PM	X53468		
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/15/2018 3:15:56 PM	X53468		
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/15/2018 3:15:56 PM	X53468		
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	1	8/15/2018 3:15:56 PM	X53468		
Surr: 4-Bromofluorobenzene	96.9	0	70-130		%Rec	1	8/15/2018 3:15:56 PM	X53468		
Surr: Dibromofluoromethane	117	0	70-130		%Rec	1	8/15/2018 3:15:56 PM	X53468		
Surr: Toluene-d8	102	0	70-130		%Rec	1	8/15/2018 3:15:56 PM	X53468		
CARBON DIOXIDE							Analyst: JRR			
Total Carbon Dioxide	86	0	1.0	н	mg CO2/	1	8/16/2018 6:42:19 PM	R53511		
SM2320B: ALKALINITY							Analyst: JRR			
Bicarbonate (As CaCO3)	93.12	20.00	20.00		mg/L Ca	1	8/16/2018 6:42:19 PM	R53511		
Carbonate (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	8/16/2018 6:42:19 PM	R53511		

Hall Environmental Analysis Laboratory, Inc.

Total Alkalinity (as CaCO3)

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

20.00

20.00

mg/L Ca 1

W Sample container temperature is out of limit as specified

8/16/2018 6:42:19 PM R53511

Page 2 of 22

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit

S % Recovery outside of range due to dilution or matrix

93.12

### Lab Order 1808728

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-9-2018 San Juan River Bluff NBB Obs				Client Sample ID: East Outfall #2 Collection Date: 8/10/2018 7:45:00 AM							
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID			
EPA METHOD 300.0: ANIONS							Analyst: MRA				
Fluoride	0.43	0.030	0.10		mg/L	1	8/14/2018 4:54:34 PM	R53448			
Chloride	4.4	0.029	0.50		mg/L	1	8/14/2018 4:54:34 PM	R53448			
Bromide	0.074	0.027	0.10	J	mg/L	1	8/14/2018 4:54:34 PM	R53448			
Phosphorus, Orthophosphate (As P)	0.64	0.093	0.50	н	mg/L	1	8/14/2018 4:54:34 PM	R53448			
Sulfate	58	4.1	10		mg/L	20	8/14/2018 5:07:26 PM	R53448			
Nitrate+Nitrite as N	ND	0.27	1.0		mg/L	5	8/14/2018 5:33:09 PM	R53448			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000085	0.000038	0.00020	J	mg/L	1	8/31/2018 11:26:48 AM	40078			
EPA METHOD 7470: MERCURY							Analyst: rde				
Mercury	0.000070	0.000038	0.00020	JFiltere	d mg/L	1	8/31/2018 11:29:05 AM	40078			
EPA METHOD 6010B: DISSOLVED ME	ETALS						Analyst: pmf				
Arsenic	ND	0.020	0.020		mg/L	1	8/27/2018 6:33:55 PM	B53717			
Barium	0.055	0.00049	0.020		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Cadmium	ND	0.00088	0.0020		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Calcium	74	0.031	1.0		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Chromium	ND	0.00081	0.0060		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Copper	ND	0.0026	0.0060		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Iron	ND	0.010	0.020		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Lead	ND	0.0050	0.0050		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Magnesium	14	0.011	1.0		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Manganese	0.0043	0.00015	0.0020		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Potassium	1.0	0.075	1.0		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Selenium	ND	0.020	0.050		mg/L	1	8/27/2018 6:01:17 PM	B53717			
Silver	0.0024	0.0010	0.0050	J	mg/L	1	8/22/2018 5:40:26 PM	B53642			
Sodium	36	0.26	1.0		mg/L	1	8/22/2018 5:40:26 PM	B53642			
Uranium	ND	0.025	0.10		mg/L	1	8/27/2018 6:01:17 PM	B53717			
Zinc	0.065	0.020	0.020		mg/L	1	8/22/2018 5:40:26 PM	B53642			
EPA 6010B: TOTAL RECOVERABLE	METALS						Analyst: ELS				
Arsenic	ND	0.011	0.020		mg/L	1	8/15/2018 11:05:28 AM	39790			
Barium	0.060	0.020	0.020		mg/L	1	8/15/2018 11:05:28 AM	39790			
Cadmium	ND	0.00099	0.0020		mg/L	1	8/15/2018 11:05:28 AM	39790			
Calcium	72	0.020	1.0		mg/L	1	8/15/2018 11:05:28 AM	39790			
Chromium	ND	0.0011	0.0060		mg/L	1	8/15/2018 11:05:28 AM	39790			
Copper	0.0015	0.0010	0.0060	J	mg/L	1	8/20/2018 12:09:19 PM	39790			
Iron	0.41	0.0067	0.050		mg/L	1	8/15/2018 11:05:28 AM	39790			
Lead	ND	0.0050	0.0050		mg/L	1	8/15/2018 11:05:28 AM	39790			
Magnesium	13	0.10	1.0		mg/L	1	8/15/2018 11:05:28 AM	39790			

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

Qualifiers: \* Va

Value exceeds Maximum Contaminant Level.

Hall Environmental Analysis Laboratory, Inc.

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

- 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 Page 3 of 22
- P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified
Lab Order 1808728 Date Reported: 9/5/2018

				a 1	ID E		e 11 // e	
CLIENT: Andeavor Bloomfield			Client	Sample	e ID: East	t Out	tall #2	
<b>Project:</b> 8-9-2018 San Juan River Bl	uff NBB Obs		Colle	ection I	<b>Date:</b> 8/10	)/201	8 7:45:00 AM	
Lab ID: 1808728-002	Matrix: A	AQUEOUS	Rec	eived I	<b>Date: 8</b> /11	/201	8 10:30:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed B	atch ID
EPA 6010B: TOTAL RECOVERABLE	METALS						Analyst: ELS	
Manganese	0.056	0.00021	0.0020		mg/L	1	8/15/2018 11:05:28 AM	39790
Potassium	0.89	0.061	1.0	J	mg/L	1	8/15/2018 11:05:28 AM	39790
Selenium	ND	0.024	0.050		mg/L	1	8/15/2018 11:05:28 AM	39790
Silver	ND	0.0018	0.0050		mg/L	1	8/15/2018 11:05:28 AM	39790
Sodium	34	0.16	1.0		mg/L	1	8/15/2018 11:05:28 AM	39790
Uranium	ND	0.029	0.10		mg/L	1	8/20/2018 12:09:19 PM	39790
Zinc	0.0050	0.0033	0.020	J	mg/L	1	8/20/2018 12:09:19 PM	39790
EPA METHOD 8260: VOLATILES SHO	ORT LIST						Analyst: DJF	
Benzene	ND	0.17	1.0		µg/L	1	8/15/2018 3:45:30 PM	X53468
Toluene	ND	0.17	1.0		µg/L	1	8/15/2018 3:45:30 PM	X53468
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/15/2018 3:45:30 PM	X53468
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/15/2018 3:45:30 PM	X53468
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/15/2018 3:45:30 PM	X53468
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	8/15/2018 3:45:30 PM	X53468
Surr: 4-Bromofluorobenzene	98.4	0	70-130		%Rec	1	8/15/2018 3:45:30 PM	X53468
Surr: Dibromofluoromethane	112	0	70-130		%Rec	1	8/15/2018 3:45:30 PM	X53468
Surr: Toluene-d8	98.0	0	70-130		%Rec	1	8/15/2018 3:45:30 PM	X53468
CARBON DIOXIDE							Analyst: JRR	
Total Carbon Dioxide	210	0	1.0	н	mg CO2/	1	8/16/2018 6:50:38 PM	R53511
SM2320B: ALKALINITY							Analyst: JRR	
Bicarbonate (As CaCO3)	233.9	20.00	20.00		mg/L Ca	1	8/16/2018 6:50:38 PM	R53511

2.000

20.00

2.000

20.00

Hall Environmental Analysis Laboratory, Inc.

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the ass
	D	Sample Diluted Due to Matrix	Е	Value above quantitation
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below qu
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range

ND

233.9

PQL Practical Quanitative Limit

Carbonate (As CaCO3)

Total Alkalinity (as CaCO3)

- S % Recovery outside of range due to dilution or matrix
- sociated Method Blank

mg/L Ca 1

mg/L Ca 1

8/16/2018 6:50:38 PM R53511

8/16/2018 6:50:38 PM R53511

- range
- antitation limits Page 4 of 22
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808728

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield			Client	Sampl	e ID: OV	W 23+	10	
Project: 8-9-2018 San Juan River Blu	ff NBB Obs		Coll	ection 1	Date: 8/1	0/201	8 8:40:00 AM	
Lab ID: 1808728-003	Matrix:	AQUEOUS	Re	ceived ]	<b>Date:</b> 8/1	1/201	8 10:30:00 AM	
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: Irm	1
Diesel Range Organics (DRO)	ND	0.31	0.40		mg/L	1	8/16/2018 3:38:23 PM	/ 39797
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/16/2018 3:38:23 PM	1 39797
Surr: DNOP	88.1	0	76.6-135		%Rec	1	8/16/2018 3:38:23 PM	1 39797
EPA METHOD 8260: VOLATILES SHOP	RT LIST						Analyst: DJI	F
Benzene	ND	0.17	1.0		µg/L	1	8/15/2018 4:15:04 PM	A X53468
Toluene	ND	0.17	1.0		µg/L	1	8/15/2018 4:15:04 PM	A X53468
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/15/2018 4:15:04 PM	A X53468
Methyl tert-butyl ether (MTBE)	0.45	0.32	1.0	J	µg/L	1	8/15/2018 4:15:04 PM	A X53468
Xylenes, Total	ND	0.64	1.5		µg/L	1	8/15/2018 4:15:04 PM	A X53468
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	1	8/15/2018 4:15:04 PM	A X53468
Surr: 4-Bromofluorobenzene	99.9	0	70-130		%Rec	1	8/15/2018 4:15:04 PM	A X53468
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	8/15/2018 4:15:04 PM	A X53468
Surr: Toluene-d8	98.4	0	70-130		%Rec	1	8/15/2018 4:15:04 PM	A X53468
EPA METHOD 8015D: GASOLINE RAN	GE						Analyst: DJI	F
Gasoline Range Organics (GRO)	0.12	0.0097	0.050		mg/L	1	8/15/2018 4:15:04 PM	A Z53468
Surr: BFB	92.9	0	70-130		%Rec	1	8/15/2018 4:15:04 PM	A Z53468

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

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
- PQL Practical Quanitative Limit
- 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 Page 5 of 22
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808728

Date Reported: 9/5/2018

CLIENT:	Andeavor Bloomfield			Client	Sampl	e ID: CV	N 25+	95	
Project:	8-9-2018 San Juan River Bluff	NBB Obs		Coll	ection I	<b>Date: </b> 8/1	0/201	8 9:05:00 AM	
Lab ID:	1808728-004	Matrix:	AQUEOUS	Re	ceived I	<b>Date: 8</b> /1	1/201	8 10:30:00 AM	
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METH	HOD 8015D: DIESEL RANGE							Analyst: Irm	
Diesel Ra	nge Organics (DRO)	ND	0.31	0.40		mg/L	1	8/16/2018 4:00:32 PM	1 39797
Motor Oil	Range Organics (MRO)	ND	2.5	2.5		mg/L	1	8/16/2018 4:00:32 PM	1 39797
Surr: D	NOP	93.1	0	76.6-135		%Rec	1	8/16/2018 4:00:32 PM	1 39797
EPA METH	HOD 8260: VOLATILES SHORT	LIST						Analyst: DJI	=
Benzene		ND	0.17	1.0		µg/L	1	8/15/2018 4:44:36 PM	1 X53468
Toluene		ND	0.17	1.0		µg/L	1	8/15/2018 4:44:36 PM	I X53468
Ethylbenz	ene	ND	0.22	1.0		µg/L	1	8/15/2018 4:44:36 PM	I X53468
Methyl ter	t-butyl ether (MTBE)	0.89	0.32	1.0	J	µg/L	1	8/15/2018 4:44:36 PM	I X53468
Xylenes, T	Fotal	ND	0.64	1.5		µg/L	1	8/15/2018 4:44:36 PM	I X53468
Surr: 1,	2-Dichloroethane-d4	114	0	70-130		%Rec	1	8/15/2018 4:44:36 PM	I X53468
Surr: 4-	Bromofluorobenzene	103	0	70-130		%Rec	1	8/15/2018 4:44:36 PM	I X53468
Surr: D	ibromofluoromethane	109	0	70-130		%Rec	1	8/15/2018 4:44:36 PM	I X53468
Surr: To	oluene-d8	105	0	70-130		%Rec	1	8/15/2018 4:44:36 PM	I X53468
EPA METH	HOD 8015D: GASOLINE RANG	E						Analyst: DJI	=
Gasoline	Range Organics (GRO)	0.44	0.0097	0.050		mg/L	1	8/15/2018 4:44:36 PM	1 Z53468
Surr: B	FB	99.2	0	70-130		%Rec	1	8/15/2018 4:44:36 PM	1 Z53468

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

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
- PQL Practical Quanitative Limit
- 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 Page 6 of 22
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808728

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield Project: 8-9-2018 San Juan River Bluff N	IBB Obs		Client Colle	Sample ection I	e ID: Tr Date:	ip Bla	nk	
Lab ID: 1808/28-005	Matrix: A			Oval	Jate: 8/	DF	8 10:30:00 AM	Rotch ID
Analyses	Kesuit	MDL	rųL	Quai	Units	Dr	Date Analyzeu	Datch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.17	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
Toluene	ND	0.17	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
Ethylbenzene	ND	0.22	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
Methyl tert-butyl ether (MTBE)	ND	0.32	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
1,2,4-1 Inmethylbenzene	ND	0.25	1.0		µg/∟ ug/L	1	8/15/2018 5:14:03 PM	W5346
1,2,5,5-11iiiletriyiberizerie		0.23	1.0		µg/∟ ug/l	1	8/15/2018 5:14:03 PM	W5346
1 2-Dibromoethane (EDB)		0.40	1.0		µg/L µg/l	1	8/15/2018 5:14:03 PM	W5346
Naphthalene	ND	0.29	2.0		μg/L μα/Ι	1	8/15/2018 5:14:03 PM	W5346
1-Methylnaphthalene	ND	0.34	4.0		µg/⊏ ug/l	1	8/15/2018 5:14:03 PM	W5346
2-Methylnaphthalene	ND	0.24	4.0		µg/= ua/L	1	8/15/2018 5:14:03 PM	W5346
Acetone	ND	0.79	10		µg/L	1	8/15/2018 5:14:03 PM	W5346
Bromobenzene	ND	0.32	1.0		μg/L	1	8/15/2018 5:14:03 PM	W5346
Bromodichloromethane	ND	0.28	1.0		μg/L	1	8/15/2018 5:14:03 PM	W5346
Bromoform	ND	0.32	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
Bromomethane	ND	0.26	3.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
2-Butanone	ND	1.3	10		µg/L	1	8/15/2018 5:14:03 PM	W5346
Carbon disulfide	ND	0.39	10		µg/L	1	8/15/2018 5:14:03 PM	W5346
Carbon Tetrachloride	ND	0.13	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
Chlorobenzene	ND	0.29	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
Chloroethane	ND	0.16	2.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
Chloroform	ND	0.40	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
Chloromethane	ND	0.29	3.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
4-Chlorotoluene	ND	0.40	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
CIS-1,2-DCE	ND	0.38	1.0		µg/∟ ug/L	1	8/15/2018 5:14:03 PM	W5346
1 2 Dibromo 3 chloropropano		0.30	1.0		µg/∟ ug/l	1	0/15/2010 5.14.03 FM	W5340
Dibromochloromethane		0.47	2.0		µg/L µg/l	1	8/15/2018 5:14:03 PM	W5346
Dibromomethane	ND	0.24	1.0		μg/L μα/Ι	1	8/15/2018 5:14:03 PM	W5346
1.2-Dichlorobenzene	ND	0.31	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
1.3-Dichlorobenzene	ND	0.31	1.0		ua/L	1	8/15/2018 5:14:03 PM	W5346
1,4-Dichlorobenzene	ND	0.40	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
Dichlorodifluoromethane	ND	1.0	1.0		μg/L	1	8/15/2018 5:14:03 PM	W5346
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
1,1-Dichloroethene	ND	0.12	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
1,3-Dichloropropane	ND	0.27	1.0		µg/L	1	8/15/2018 5:14:03 PM	W5346
2,2-Dichloropropane	ND	0.18	2.0		µg/L	1	8/15/2018 5:14:03 PM	W5346

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

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
- PQL Practical Quanitative Limit
- 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 Page 7 of 22
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1808728

Date Reported: 9/5/2018

CLIENT: Andeavor Bloomfield			Client	Sample ID: 7	rip Bla	nk	
<b>Project:</b> 8-9-2018 San Juan River Bluff N	BB Obs		Colle	ection Date:			
Lab ID: 1808728-005	Matrix: A	AQUEOUS	Rec	eived Date: 8	/11/201	8 10:30:00 AM	
Analyses	Result	MDL	PQL	Qual Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES						Analyst: DJF	
1,1-Dichloropropene	ND	0.16	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
Hexachlorobutadiene	ND	0.80	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
2-Hexanone	ND	0.91	10	µg/L	1	8/15/2018 5:14:03 PM	W5346
Isopropylbenzene	ND	0.22	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
4-Isopropyltoluene	ND	0.24	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
4-Methyl-2-pentanone	ND	0.45	10	µg/L	1	8/15/2018 5:14:03 PM	W5346
Methylene Chloride	ND	0.21	3.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
n-Butylbenzene	ND	0.25	3.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
n-Propylbenzene	ND	0.24	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
sec-Butylbenzene	ND	0.20	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
Styrene	ND	0.25	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
tert-Butylbenzene	ND	0.22	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
1,1,1,2-Tetrachloroethane	ND	0.25	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
1,1,2,2-Tetrachloroethane	ND	0.33	2.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
Tetrachloroethene (PCE)	ND	0.15	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
trans-1,2-DCE	ND	0.18	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
trans-1,3-Dichloropropene	ND	0.28	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
1,2,3-Trichlorobenzene	ND	0.28	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
1,2,4-Trichlorobenzene	ND	0.27	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
1,1,1-Trichloroethane	ND	0.15	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
1,1,2-Trichloroethane	ND	0.23	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
Trichloroethene (TCE)	ND	0.26	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
Trichlorofluoromethane	ND	0.17	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
1,2,3-Trichloropropane	ND	0.57	2.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
Vinyl chloride	ND	0.11	1.0	µg/L	1	8/15/2018 5:14:03 PM	W5346
Xylenes, Total	ND	0.64	1.5	µg/L	1	8/15/2018 5:14:03 PM	W5346
Surr: 1,2-Dichloroethane-d4	106	0	70-130	%Rec	1	8/15/2018 5:14:03 PM	W5346
Surr: 4-Bromofluorobenzene	98.5	0	70-130	%Rec	1	8/15/2018 5:14:03 PM	W5346
Surr: Dibromofluoromethane	112	0	70-130	%Rec	1	8/15/2018 5:14:03 PM	W5346
Surr: Toluene-d8	100	0	70-130	%Rec	1	8/15/2018 5:14:03 PM	W5346
EPA METHOD 8015D: GASOLINE RANGE						Analyst: DJF	
Gasoline Range Organics (GRO)	0.074	0.0097	0.050	ma/L	1	8/15/2018 5:14:03 PM	Z53468
Surr: BFB	102	0	70-130	%Rec	1	8/15/2018 5:14:03 PM	Z53468

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Bla	nk
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 8 of 22
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	1 uge 0 01 22
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as	s specified

WO#: 1808728

# Client:Andeavor BloomfieldProject:8-9-2018 San Juan River Bluff NBB Observatio

Sample ID MB	SampT	Type: <b>m</b> t	olk	Tes	tCode: El	PA Method	300.0: Anions	6		
Client ID: PBW	Batcl	h ID: R5	3448	F	RunNo: 5	3448				
Prep Date:	Analysis D	Date: <b>8/</b>	14/2018	S	SeqNo: 1	761086	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P	0.27	0.50								J
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								
Sample ID LCS	SampT	Type: Ics	5	Tes	tCode: El	PA Method	300.0: Anions	6		
Sample ID LCS Client ID: LCSW	Samp1 Batcl	Гуре: <b>Іс</b> я h ID: <b>R5</b>	3448	Tes F	tCode: El RunNo: 5	PA Method 3448	300.0: Anions	5		
Sample ID LCS Client ID: LCSW Prep Date:	Samp1 Batcl Analysis D	Гуре: <b>Іс</b> я h ID: <b>R5</b> Date: <b>8</b> /	3 3448 14/2018	Tes F S	tCode: El RunNo: 5 SeqNo: 1	PA Method 3448 761087	<b>300.0: Anions</b> Units: <b>mg/L</b>	5		
Sample ID LCS Client ID: LCSW Prep Date: Analyte	SampT Batcl Analysis E Result	Fype: Ics h ID: R5 Date: 8/ PQL	3 3448 14/2018 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 5 SeqNo: 1 %REC	PA Method 3448 761087 LowLimit	<b>300.0: Anions</b> Units: <b>mg/L</b> HighLimit	s %RPD	RPDLimit	Qual
Sample ID LCS Client ID: LCSW Prep Date: Analyte Fluoride	SampT Batcl Analysis D Result 0.50	Type: Ics h ID: R5 Date: 8/ PQL 0.10	5 3448 14/2018 SPK value 0.5000	Tes F S SPK Ref Val 0	tCode: El RunNo: 5 SeqNo: 1 %REC 99.4	PA Method 3448 761087 LowLimit 90	300.0: Anions Units: mg/L HighLimit 110	s %RPD	RPDLimit	Qual
Sample ID LCS Client ID: LCSW Prep Date: Analyte Fluoride Chloride	SampT Batcl Analysis E Result 0.50 4.6	Type: Ics h ID: R5 Date: 8/ PQL 0.10 0.50	3448 3448 14/2018 SPK value 0.5000 5.000	Tes F S SPK Ref Val 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 99.4 91.7	PA Method 3448 761087 LowLimit 90 90	300.0: Anions Units: mg/L HighLimit 110 110	s %RPD	RPDLimit	Qual
Sample ID LCS Client ID: LCSW Prep Date: Analyte Fluoride Chloride Bromide	SampT Batcl Analysis D Result 0.50 4.6 2.4	Type: Ics h ID: R5 Date: 8/ PQL 0.10 0.50 0.10	3448 3448 14/2018 SPK value 0.5000 5.000 2.500	Tes F SPK Ref Val 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 99.4 91.7 94.1	PA Method 3448 761087 LowLimit 90 90 90	<b>300.0: Anions</b> Units: <b>mg/L</b> HighLimit 110 110 110	s %RPD	RPDLimit	Qual
Sample ID LCS Client ID: LCSW Prep Date: Analyte Fluoride Chloride Bromide Phosphorus, Orthophosphate (As P	SampT Batcl Analysis D Result 0.50 4.6 2.4 4.6	Fype: Ics h ID: R5 Date: 8/ PQL 0.10 0.50 0.10 0.50	3448 3448 14/2018 SPK value 0.5000 5.000 2.500 5.000	Tes F SPK Ref Val 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 99.4 91.7 94.1 92.8	PA Method 3448 761087 LowLimit 90 90 90 90	<b>300.0: Anions</b> Units: <b>mg/L</b> HighLimit 110 110 110 110	s %RPD	RPDLimit	Qual
Sample ID LCS Client ID: LCSW Prep Date: Analyte Fluoride Chloride Bromide Phosphorus, Orthophosphate (As P Sulfate	SampT Batcl Analysis D Result 0.50 4.6 2.4 4.6 9.0	Fype: Ics h ID: R5 Date: 8/ PQL 0.10 0.50 0.10 0.50 0.50	3448 3448 14/2018 SPK value 0.5000 5.000 2.500 5.000 10.00	Tes F SPK Ref Val 0 0 0 0 0 0 0	tCode: El RunNo: 5 SeqNo: 1 %REC 99.4 91.7 94.1 92.8 90.3	PA Method 3448 761087 LowLimit 90 90 90 90 90 90	<b>300.0: Anions</b> Units: <b>mg/L</b> HighLimit 110 110 110 110 110 110	%RPD	RPDLimit	Qual

### **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
- PQL Practical Quanitative Limit
- 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

Page 9 of 22

Client: Project:	Andeavor B 8-9-2018 Sa	loomfield n Juan Riv	ver B	luff NBB C	Observatio						
Sample ID LCS-39	797	SampTyp	e: LC	s	Tes	tCode: El	PA Method	8015D: Diese	l Range		
Client ID: LCSW		Batch ID	): <b>39</b>	797	F	RunNo: 5	3482				
Prep Date: 8/15/2	<b>018</b> Ar	nalysis Date	e: 8/	/16/2018	S	SeqNo: 1	762631	Units: mg/L			
Analyte	F	Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics ([	DRO)	2.3	0.40	2.500	0	90.1	76.5	158			
Surr: DNOP		0.22		0.2500		86.8	76.6	135			
Sample ID MB-397	97	SampTyp	e: Me	BLK	Tes	tCode: El	PA Method	8015D: Diese	l Range		
Client ID: PBW		Batch ID	): 39	797	F	RunNo: 5	3482				
Prep Date: 8/15/2	<b>018</b> Ar	nalysis Date	e: 8/	/16/2018	5	SeqNo: 1	762632	Units: mg/L			
Analyte	F	Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (	DRO)	ND	0.40								
Motor Oil Range Organics	s (MRO)	ND	2.5								
Surr: DNOP		0.47		0.5000		94.0	76.6	135			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 10 of 22

Client: Ar	deavor Bloomf	ield									
Project: 8-9	9-2018 San Juar	n River B	luff NBB (	Observatio							
Sample ID rb	Samp	Туре: М	BLK	Tes	tCode: El	PA Method	8260: Volatile	es Short L	_ist		
Client ID: PBW	Bat	ch ID: X5	3468	RunNo: 53468							
Prep Date:	Analysis	Date: 8/	15/2018	5	SeqNo: 1	761753	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-d	4 9.9		10.00		99.1	70	130				
Surr: 4-Bromofluorobenzer	ne 10		10.00		99.8	70	130				
Surr: Dibromofluoromethar	ne 11		10.00		108	70	130				
Surr: Toluene-d8	9.8		10.00		98.1	70	130				
Sample ID 100ng Ics	Samp	Type: LC	S	Tes	tCode: El	PA Method	8260: Volatile	es Short L	_ist		
Client ID: LCSW	Bat	ch ID: X5	3468	F	RunNo: 5	3468					
Prep Date:	Analysis	Date: 8/	15/2018	S	SeqNo: 1	761765	Units: µg/L				
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	94.7	70	130				
Surr: 1,2-Dichloroethane-d	4 11		10.00		107	70	130				
Surr: 4-Bromofluorobenzer	ne 10		10.00		102	70	130				
Surr: Dibromofluoromethar	ne 11		10.00		108	70	130				
Surr: Toluene-d8	9.6		10.00		96.4	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
- PQL Practical Quanitative Limit
- 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

Page 11 of 22

Client: Ande Project: 8-9-2	eavor Bloomfield	1 iver F	Sluff NBB (	bservatio						
Sample ID rb	Samply	pe: M	BLK	les	tCode:	EPA Method	18260B: VOL	ATILES		
Client ID: PBW	Batch	D: W	53468	F	RunNo:	53468				
Prep Date:	Analysis Da	te: 8	/15/2018	:	SeqNo:	1761672	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%RE	C 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								
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		1.0								
1 1-Dichloroethene		1.0								
1 2 Dichloronronano		1.0								

#### **Qualifiers:**

1,3-Dichloropropane

2,2-Dichloropropane

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

ND

ND

1.0

2.0

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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
- Page 12 of 22

Client:AProject:8	Andeavor Bloomfi -9-2018 San Juan	ield 1 River B	Bluff NBB (	Observatio						
Sample ID rb	Samp	Туре: МЕ	BLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Bate	ch ID: W	53468	F	RunNo: 5	53468				
Prep Date:	Analysis	Date: 8/	15/2018	S	SeqNo: 1	1761672	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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-Butvlbenzene	ND	1.0								
1.1.1.2-Tetrachloroethane	ND	1.0								
1.1.2.2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCF)	ND	1.0								
trans-1 2-DCF	ND	1.0								
trans-1 3-Dichloropropene	ND	1.0								
1 2 3-Trichlorobenzene	ND	1.0								
1.2.4-Trichlorobenzene		1.0								
1,2,4-Trichloroethane		1.0								
1,1,1-Trichloroothano		1.0								
Trichloroothono (TCE)		1.0								
Trichlorofluoromothano		1.0								
	ND	1.0								
1,2,3-IIICIII0I0proparie	ND	2.0								
Vinyi chionde	ND	1.0								
Xylenes, Total	ND	1.5	40.00		00.4	70	100			
Surr: 1,2-Dichloroethane	·04 9.9		10.00		99.1	70	130			
Surr: 4-Bromofluorobenz	ene 10		10.00		99.8	70	130			
Surr: Dibromofluorometh	ane 11		10.00		108	70	130			
Surr: Toluene-d8	9.8		10.00		98.1	70	130			
Sample ID 100ng Ics	s Samp	Type: LC	s	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: LCSW	Bate	ch ID: W	53468	F	RunNo: 🚦	53468				
Prep Date:	Analysis	Date: 8/	15/2018	S	SeqNo: 1	1761673	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			

#### **Qualifiers:**

Chlorobenzene

Toluene

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

19

20

1.0

1.0

20.00

20.00

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

E Value above quantitation range

94.7

99.9

- J Analyte detected below quantitation limits
- P Sample pH Not In Range

0

0

- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

70

70

130

130

Page 13 of 22

### Client: Andeavor Bloomfield

Project: 8-9-2018 San Juan River Bluff NBB Observatio

Sample ID 100ng lcs	SampT	ype: LC	s	TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch	n ID: W	53468	RunNo: <b>53468</b>						
Prep Date:	Analysis D	ate: 8/	15/2018	5	SeqNo: 1	761673	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.6		10.00		96.4	70	130			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 14 of 22

Client: Project:	Andea 8-9-20	avor Bloomfield )18 San Juan River Bluff NBB (	Observatio			
Sample ID Client ID:	MB-40078 PBW	SampType: <b>MBLK</b> Batch ID: <b>40078</b>	TestCode: EPA Method RunNo: 53851	7470: Mercury		
Prep Date: Analyte	8/30/2018	Analysis Date: 8/31/2018 Result PQL SPK value	SeqNo: 1776962 SPK Ref Val %REC LowLimit	Units: <b>mg/L</b> HighLimit %RPD	RPDLimit	Qual
Mercury		0.000068 0.00020				J
Sample ID	LCS-40078	SampType: LCS	TestCode: EPA Method	7470: Mercury		
Client ID:	LCSW	Batch ID: 40078	RunNo: 53851			
Prep Date:	8/30/2018	Analysis Date: 8/31/2018	SeqNo: 1776963	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 99.6 80	120		

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 15 of 22

Project:	8-9-2018 San Juan River Bluff NBI	3 Observatio
Client:	Andeavor Bloomfield	

Sample ID MB-B	Samp	Type: ME	BLK	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als		
Client ID: PBW	Batc	h ID: <b>B5</b>	3642	RunNo: 53642							
Prep Date:	Analysis [	Date: <b>8/</b>	22/2018	5	SeqNo: 1	769047	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium	ND	0.020									
Cadmium	ND	0.0020									
Calcium	ND	1.0									
Chromium	ND	0.0060									
Copper	ND	0.0060									
ron	ND	0.020									
Lead	ND	0.0050									
Vagnesium	ND	1.0									
Manganese	ND	0.0020									
Potassium	0.10	1.0								J	
Silver	ND	0.0050									
Sodium	0.29	1.0								J	
Zinc	ND	0.020									
Sample ID LCS-B	Samp	SampType: LCS			TestCode: EPA Method 6010B: Dissolved Metals						
Client ID: LCSW	Batc	h ID: <b>B5</b>	3642	F	3642						
Prep Date:	Analysis I	Date: 8/	22/2018	S	SeqNo: 1	769049	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium	0.52	0.020	0.5000	0	104	80	120				
Cadmium	0.52	0.0020	0.5000	0	105	80	120				
Calcium	49	1.0	50.00	0	98.1	80	120				
Chromium	0.49	0.0060	0.5000	0	98.2	80	120				
Copper	0.50	0.0060	0.5000	0	99.5	80	120				
ron	0.51	0.020	0.5000	0	103	80	120				
Lead	0.50	0.0050	0.5000	0	99.9	80	120				
Magnesium	50	1.0	50.00	0	100	80	120				
Manganese	0.49	0.0020	0.5000	0	98.7	80	120				
Potassium	50	1.0	50.00	0	99.5	80	120				
Silver	0.11	0.0050	0.1000	0	111	80	120				
Sodium	51	1.0	50.00	0	103	80	120				
Zinc	0.48	0.020	0.5000	0	95.9	80	120				
Sample ID MB-B	Samp	Туре: МЕ	BLK	Tes	tCode: El	PA Method	6010B: Disso	lved Meta	als		
Client ID: PBW	Batc	h ID: <b>B5</b>	3717	F	anNo: 5	3717					
Prep Date:	Analysis [	Date: 8/	27/2018	5	SeqNo: 1	772853	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	ND	0.020									

#### **Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank

Е Value above quantitation range

- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 16 of 22

Client: Project:		Andeavor Bloomfield 8-9-2018 San Juan R	ver B	luff NBB (	Observatio						
Sample ID	MB-B	SampTy	e: MI	BLK	Test	tCode: E	PA Method	6010B: Disso	lved Meta	als	
Client ID:	PBW	Batch I	D: <b>B</b> 5	3717	R	unNo: 5	3717				
Prep Date:		Analysis Da	e: <b>8</b> /	27/2018	S	eqNo: 1	772853	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	SampTy	e: LC	s	Test	Code: F	DA Mothod		lund Mote		
				-	100		FA Methou	6010B: DISSO		als	
Client ID:	LCSW	Batch I	D: <b>B</b> 5	53717	R	unNo: 5	3717	6010B: DISSO		als	
Client ID: Prep Date:	LCSW	Batch I Analysis Da	D: <b>B5</b> e: <b>8</b> /	53717 /27/2018	R	tunNo: <b>5</b> SeqNo: <b>1</b>	3717 772855	Units: mg/L	iveu meta	ais	
Client ID: Prep Date: Analyte	LCSW	Batch I Analysis Da Result	D: <b>B5</b> e: <b>8</b> / PQL	53717 /27/2018 SPK value	R SPK Ref Val	unNo: 5 eqNo: 1 %REC	3717 772855 LowLimit	Units: <b>mg/L</b> HighLimit	%RPD	ars RPDLimit	Qual
Client ID: Prep Date: Analyte Arsenic	LCSW	Batch I Analysis Da Result 0.49	D: <b>B5</b> e: <b>8</b> / PQL 0.020	<b>53717</b> <b>/27/2018</b> SPK value 0.5000	SPK Ref Val	2unNo: 5 6eqNo: 1 <u>%REC</u> 98.6	3717 772855 LowLimit 80	Units: mg/L HighLimit 120	%RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Arsenic Selenium	LCSW	Batch I Analysis Da Result 0.49 0.49	D: <b>B5</b> e: <b>8</b> PQL 0.020 0.050	53717 727/2018 SPK value 0.5000 0.5000	SPK Ref Val 0 0	2unNo: 5 6eqNo: 1 <u>%REC</u> 98.6 98.0	<b>3717</b> <b>772855</b> LowLimit 80 80	Units: mg/L HighLimit 120 120	%RPD	RPDLimit	Qual

#### **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
- PQL Practical Quanitative Limit
- 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

### Page 17 of 22

Client:

Project: 8-9-2018 San Juan River Bluff NBB Observatio

Andeavor Bloomfield

Sample ID	LCS-39790	Samp	Туре: <b>LC</b>	S	TestCode: EPA 6010B: Total Recoverable Metals						
Client ID:	LCSW	Bato	h ID: 39	790	F	RunNo: 5	3449				
Prep Date:	8/14/2018	Analysis	Date: <b>8/</b>	15/2018	S	SeqNo: 1	761163	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		0.50	0.020	0.5000	0	99.4	80	120			
Barium		0.53	0.020	0.5000	0	105	80	120			
Cadmium		0.52	0.0020	0.5000	0	104	80	120			
Calcium		49	1.0	50.00	0	97.2	80	120			
Chromium		0.49	0.0060	0.5000	0	98.4	80	120			
Iron		0.50	0.050	0.5000	0	100	80	120			
Lead		0.51	0.0050	0.5000	0	101	80	120			
Magnesium		48	1.0	50.00	0	96.8	80	120			
Manganese		0.50	0.0020	0.5000	0	99.5	80	120			
Potassium		47	1.0	50.00	0	94.4	80	120			
Selenium		0.51	0.050	0.5000	0	103	80	120			
Silver		0.11	0.0050	0.1000	0	107	80	120			
Sodium		49	1.0	50.00	0	98.5	80	120			
Sample ID	1808728-001CMS	Samp	Туре: <b>МS</b>	6	Tes	tCode: El	PA 6010B:	Total Recover	able Meta	als	
Client ID:	East Outfall #3	Bato	ch ID: 39	790	F	3449					
Prep Date:	8/14/2018	Analysis	Date: 8/	15/2018	S	SeqNo: 1	761169	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Analyte Arsenic		Result 0.48	PQL 0.020	SPK value 0.5000	SPK Ref Val 0	%REC 96.0	LowLimit 75	HighLimit 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium		Result 0.48 0.56	PQL 0.020 0.020	SPK value 0.5000 0.5000	SPK Ref Val 0 0.06459	%REC 96.0 98.4	LowLimit 75 75	HighLimit 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium		Result 0.48 0.56 0.51	PQL 0.020 0.020 0.0020	SPK value 0.5000 0.5000 0.5000	SPK Ref Val 0 0.06459 0	%REC 96.0 98.4 102	LowLimit 75 75 75	HighLimit 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium		Result 0.48 0.56 0.51 86	PQL 0.020 0.020 0.0020 1.0	SPK value 0.5000 0.5000 0.5000 50.00	SPK Ref Val       0       0.06459       0       35.55	%REC 96.0 98.4 102 100	LowLimit 75 75 75 75	HighLimit 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium		Result 0.48 0.56 0.51 86 0.46	PQL 0.020 0.020 0.0020 1.0 0.0060	SPK value 0.5000 0.5000 0.5000 50.00 0.5000	SPK Ref Val 0 0.06459 0 35.55 0	%REC 96.0 98.4 102 100 92.6	LowLimit 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron		Result 0.48 0.56 0.51 86 0.46 0.66	PQL 0.020 0.020 0.0020 1.0 0.0060 0.050	SPK value 0.5000 0.5000 0.5000 50.00 0.5000 0.5000	SPK Ref Val       0       0.06459       0       35.55       0       0.1479	%REC 96.0 98.4 102 100 92.6 102	LowLimit 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead		Result       0.48       0.56       0.51       86       0.46       0.66       0.48	PQL 0.020 0.0020 1.0 0.0060 0.050 0.0050	SPK value 0.5000 0.5000 50.00 0.5000 0.5000 0.5000	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0	%REC 96.0 98.4 102 100 92.6 102 96.6	LowLimit 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium		Result       0.48       0.56       0.51       86       0.46       0.66       0.48       56	PQL 0.020 0.020 1.0 0.0060 0.050 0.0050 1.0	SPK value 0.5000 0.5000 50.00 0.5000 0.5000 0.5000 50.00	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245	%REC 96.0 98.4 102 100 92.6 102 96.6 99.1	LowLimit 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium Manganese		Result       0.48       0.56       0.51       86       0.46       0.66       0.48       56       0.50	PQL 0.020 0.020 1.0 0.0060 0.050 0.0050 1.0 0.0020	SPK value 0.5000 0.5000 50.00 0.5000 0.5000 0.5000 50.00 0.5000	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245 0.005310	%REC 96.0 98.4 102 100 92.6 102 96.6 99.1 99.0	LowLimit 75 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium Manganese Potassium		Result       0.48       0.56       0.51       86       0.46       0.66       0.48       56       0.50       50	PQL 0.020 0.020 1.0 0.0060 0.050 0.0050 1.0 0.0020 1.0	SPK value 0.5000 0.5000 50.00 0.5000 0.5000 0.5000 50.00 50.00	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245 0.005310 1.644	%REC 96.0 98.4 102 92.6 102 96.6 99.1 99.0 95.8	LowLimit 75 75 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium Manganese Potassium Selenium		Result       0.48       0.56       0.51       86       0.46       0.66       0.48       56       0.50       50       0.48	PQL 0.020 0.020 1.0 0.0060 0.050 0.0050 1.0 0.0020 1.0 0.0020	SPK value 0.5000 0.5000 50.00 0.5000 0.5000 0.5000 50.00 50.00 0.5000	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245 0.005310 1.644 0	%REC 96.0 98.4 102 92.6 102 96.6 99.1 99.0 95.8 95.6	LowLimit 75 75 75 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium Manganese Potassium Selenium Silver		Result 0.48 0.56 0.51 86 0.46 0.66 0.48 56 0.50 50 0.48 0.11	PQL 0.020 0.0020 1.0 0.0060 0.050 0.0050 1.0 0.0020 1.0 0.050 0.0050	SPK value 0.5000 0.5000 50.00 0.5000 0.5000 0.5000 50.00 0.5000 0.5000 0.5000 0.1000	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245 0.005310 1.644 0 0 0	%REC 96.0 98.4 102 100 92.6 102 96.6 99.1 99.0 95.8 95.6 107	LowLimit 75 75 75 75 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium Manganese Potassium Selenium Silver Sodium		Result 0.48 0.56 0.51 86 0.46 0.46 0.48 56 0.50 50 0.48 0.11 65	PQL 0.020 0.0020 1.0 0.0050 0.0050 1.0 0.0020 1.0 0.0050 0.0050 1.0	SPK value 0.5000 0.5000 50.00 0.5000 0.5000 0.5000 50.00 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245 0.005310 1.644 0 0 16.56	%REC 96.0 98.4 102 92.6 102 96.6 99.1 99.0 95.8 95.6 107 96.7	LowLimit 75 75 75 75 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125 125 125	<u>%RPD</u>	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium Manganese Potassium Selenium Silver Sodium Sample ID	1808728-001CMSI	Result       0.48       0.56       0.51       86       0.46       0.66       0.48       0.50       50       0.48       0.11       65       D     Samp	PQL 0.020 0.0020 1.0 0.0050 0.0050 1.0 0.0020 1.0 0.0050 0.0050 1.0 Type: MS	SPK value 0.5000 0.5000 50.00 0.50000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245 0.005310 1.644 0 0 16.56 Tes	%REC 96.0 98.4 102 100 92.6 102 96.6 99.1 99.0 95.8 95.6 107 96.7	LowLimit 75 75 75 75 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium Manganese Potassium Selenium Silver Sodium Sample ID Client ID:	1808728-001CMSI East Outfall #3	Result       0.48       0.56       0.51       86       0.46       0.66       0.48       56       0.50       50       0.48       0.11       65       D       Bato	PQL 0.020 0.020 1.0 0.0050 0.0050 1.0 0.0020 1.0 0.0050 1.0 Type: MS ch ID: 39	SPK value 0.5000 0.5	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245 0.005310 1.644 0 0 16.56 Tes	%REC 96.0 98.4 102 92.6 102 96.6 99.1 99.0 95.8 95.6 107 96.7 tCode: Ef	LowLimit 75 75 75 75 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium Manganese Potassium Selenium Silver Sodium Sample ID Client ID: Prep Date:	1808728-001CMSI East Outfall #3 8/14/2018	Result       0.48       0.56       0.51       86       0.46       0.66       0.48       56       0.50       50       0.48       0.11       65       D       Samp       Bato       Analysis	PQL 0.020 0.020 1.0 0.0050 0.0050 1.0 0.0020 1.0 0.0050 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0020 1.0 0.0020 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 1.0 0.0050 0.0050 1.0 0.005	SPK value 0.5000 0.5000 50.00 0.5000 0.1000 50.000 1.000 50.0000 50.0000 50.0000 50.0000 50.00	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245 0.005310 1.644 0 0 16.56 Tes F	%REC 96.0 98.4 102 100 92.6 102 96.6 99.1 99.0 95.8 95.6 107 95.7 tCode: <b>Ef</b> RunNo: <b>5</b> SeqNo: <b>1</b>	LowLimit 75 75 75 75 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125	%RPD	RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium Manganese Potassium Selenium Silver Sodium Sample ID Client ID: Prep Date: Analyte	1808728-001CMSI East Outfall #3 8/14/2018	Result       0.48       0.56       0.51       86       0.46       0.66       0.48       56       0.50       50       0.48       0.11       65       D       Samp       Bato       Analysis       Result	PQL 0.020 0.020 1.0 0.0060 0.050 0.0050 1.0 0.0020 1.0 0.0050 1.0 0.0050 1.0 Type: MS ch ID: <b>39</b> Date: <b>8</b> /	SPK value 0.5000 0.5	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245 0.005310 1.644 0 0 16.56 Tes F SPK Ref Val	%REC 96.0 98.4 102 100 92.6 102 96.6 99.1 99.0 95.8 95.6 107 96.7 tCode: El SunNo: 5: SeqNo: 1: %REC	LowLimiti 75 75 75 75 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125	%RPD	RPDLimit als RPDLimit	Qual
Analyte Arsenic Barium Cadmium Calcium Chromium Iron Lead Magnesium Manganese Potassium Selenium Silver Sodium Sample ID Client ID: Prep Date: Analyte Arsenic	1808728-001CMSI East Outfall #3 8/14/2018	Result       0.48       0.56       0.51       86       0.46       0.66       0.48       56       0.50       50       0.48       0.11       65       D       Samp       Bato       Analysis       Result       0.47	PQL 0.020 0.020 1.0 0.0060 0.050 0.0050 1.0 0.0050 1.0 0.0050 1.0 Type: MS ch ID: 39 Date: 8/ PQL 0.020	SPK value 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.1000 50.00 <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.00</b> <b>50.0</b>	SPK Ref Val 0 0.06459 0 35.55 0 0.1479 0 6.245 0.005310 1.644 0 0 16.56 Tes SPK Ref Val 0	%REC 96.0 98.4 102 100 92.6 102 96.6 99.1 99.0 95.8 95.6 107 96.7 tCode: <b>E</b> SunNo: <b>5</b> SeqNo: <b>1</b> %REC 93.9	LowLimit 75 75 75 75 75 75 75 75 75 75 75 75 75	HighLimit 125 125 125 125 125 125 125 125	%RPD rable Meta %RPD 2.18	RPDLimit als RPDLimit 20	Qual

#### **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
- PQL Practical Quanitative Limit
- 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
- Page 18 of 22

WO#: 1808728 05-Sep-18

### Client: Andeavor Bloomfield

Project: 8-9-2018 San Juan River Bluff NBB Observatio

Sample ID	1808728-001CMSD SampType: MSD				TestCode: EPA 6010B: Total Recoverable Metals						
Client ID:	East Outfall #3	Bato	ch ID: 39	790	F	RunNo: 5	53449				
Prep Date:	8/14/2018	Analysis	Date: 8/	15/2018	5	SeqNo: 1	761170	Units: <b>mg/L</b>			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium		0.52	0.0020	0.5000	0	104	75	125	1.83	20	
Calcium		85	1.0	50.00	35.55	99.1	75	125	0.676	20	
Chromium		0.47	0.0060	0.5000	0	93.4	75	125	0.905	20	
Iron		0.67	0.050	0.5000	0.1479	104	75	125	1.30	20	
Lead		0.50	0.0050	0.5000	0	99.4	75	125	2.87	20	
Magnesium		56	1.0	50.00	6.245	98.8	75	125	0.328	20	
Manganese		0.50	0.0020	0.5000	0.005310	99.5	75	125	0.435	20	
Potassium		51	1.0	50.00	1.644	99.6	75	125	3.80	20	
Selenium		0.48	0.050	0.5000	0	96.2	75	125	0.615	20	
Silver		0.11	0.0050	0.1000	0	108	75	125	1.07	20	
Sodium		65	1.0	50.00	16.56	97.5	75	125	0.654	20	
Sample ID	MB-39790	Samp	Туре: МЕ	BLK	Tes	tCode: E	PA 6010B:	Total Recover	able Meta	als	
Client ID:	PBW	Bato	ch ID: 39	790	F	RunNo: 5	53449				
Prep Date:	8/14/2018	Analysis	Date: 8/	15/2018	S	SeqNo: 1	761175	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								
Calcium		ND	1.0								
Chromium		ND	0.0060								
Iron		ND	0.050								
Lead		ND	0.0050								
Magnesium		ND	1.0								
Manganese		ND	0.0020								
Potassium		ND	1.0								
Selenium		0.024	0.050								J
Silver		ND	0.0050								
Sodium		ND	1.0								
Sample ID	MB-39790	Samp	Туре: МЕ	BLK	Tes	tCode: E	PA 6010B:	Total Recover	able Meta	als	
Client ID:	PBW	Bato	ch ID: 39	790	F	RunNo: 5	53550				
Prep Date:	8/14/2018	Analysis	Date: 8/	20/2018	S	SeqNo: 1	765748	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper		0.0026	0.0060								J
Uranium		ND	0.10								
Zinc		ND	0.020								

#### **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
- PQL Practical Quanitative Limit
- 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

Page 19 of 22

WO#:	1808728

Client:	Andeavoi	r Bloomfi	ield								
Project:	8-9-2018	San Juan	River B	luff NBB (	Observatio						
Sample ID	LCS-39790	Samp	Type: LC	s	Tes	tCode: El	PA 6010B:	Total Recover	able Meta	als	
Client ID:	LCSW	Bato	ch ID: 39	790	RunNo: <b>53550</b>						
Prep Date:	8/14/2018	Analysis	Date: 8/	/20/2018	S	SeqNo: 1	765750	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper		0.51	0.0060	0.5000	0	103	80	120			
Uranium		0.46	0.10	0.5000	0	91.6	80	120			
Zinc		0.52	0.020	0.5000	0	104	80	120			
Sample ID	1808728-001CMS	Samp	Туре: М	S	TestCode: EPA 6010B: Total Recoverable Metals						
Client ID:	East Outfall #3	Bato	ch ID: 39	790	RunNo: <b>53550</b>						
Prep Date:	8/14/2018	Analysis	Date: 8/	/20/2018	SeqNo: 1765778			Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper		0.52	0.0060	0.5000	0.002430	104	75	125			
Uranium		0.45	0.10	0.5000	0	90.1	75	125			
Zinc		0.52	0.020	0.5000	0	103	75	125			
Sample ID	1808728-001CMSI	D Samp	Туре: М	SD	Tes	tCode: El	PA 6010B:	Total Recover	able Meta	als	
Client ID:	East Outfall #3	Bato	ch ID: 39	790	F	RunNo: 5	3550				
Prep Date:	8/14/2018	Analysis	Date: 8/	/20/2018	5	SeqNo: 1	765779	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper		0.52	0.0060	0.5000	0.002430	103	75	125	0.563	20	
Uranium		0.45	0.10	0.5000	0	91.0	75	125	0.961	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
- PQL Practical Quanitative Limit
- 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

Page 20 of 22

Client:AndeProject:8-9-2	eavor Bloomfield 2018 San Juan Riv	er Bluff NBB (	Observatio						
Sample ID rb	SampType	MBLK	Test	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBW	Batch ID:	Batch ID: <b>Z53468</b> RunNo: <b>53468</b>							
Prep Date:	Analysis Date:	8/15/2018	S	SeqNo: 17	761928	Units: mg/L			
Analyte	Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO	) 0.018 0.	050							J
Surr: BFB	9.8	10.00		98.1	70	130			
Sample ID 2.5ug gro Ics	s SampType	LCS	Test	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSW	Batch ID:	Z53468	R	unNo: 5	3468				
Prep Date:	Analysis Date:	8/15/2018	S	SeqNo: 17	761929	Units: mg/L			
Analyte	Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO	) 0.52 0.	050 0.5000	0	104	70	130			
Surr: BFB	9.4	10.00		94.0	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
- PQL Practical Quanitative Limit
- 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

Page 21 of 22

Client:	1	Andeavor Bloomfield									
Project:	8	8-9-2018 San Juan Riv	er Blu	uff NBB C	Observatio						
Sample ID	mb-1 alk	s SampType	: MBL	_K	Test	tCode: SI	M2320B: Al	kalinity			
Client ID:	PBW	Batch ID	: R53	511	R	unNo: <b>5</b>	3511				
Prep Date:		Analysis Date	: 8/1	6/2018	S	eqNo: 1	763637	Units: mg/L	CaCO3		
Analyte	( 0.000	Result F	QL :	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	) ND 2	0.00								
Sample ID	lcs-1 alk	SampType	E LCS	;	Test	tCode: SI	M2320B: Al	kalinity			
Client ID:	LCSW	Batch ID	: R53	511	R	unNo: 5	3511				
Prep Date:		Analysis Date	: 8/1	6/2018	S	eqNo: 1	763638	Units: mg/L	CaCO3		
Analyte		Result F	QL :	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	) 79.48 2	0.00	80.00	0	99.4	90	110			
Sample ID	mb-2 alk	s SampType	: MBL	_K	Test	tCode: SI	M2320B: Al	kalinity			
Client ID:	PBW	Batch ID	: R53	511	R	unNo: 5	3511				
Prep Date:		Analysis Date	: 8/1	6/2018	S	eqNo: 1	763661	Units: mg/L	CaCO3		
Analyte		Result F	QL :	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	) ND 2	0.00								
Sample ID	lcs-2 alk	SampType	: LCS	;	Test	tCode: SI	M2320B: Al	kalinity			
Client ID:	LCSW	Batch ID	: R53	511	R	unNo: 5	3511				
Prep Date:		Analysis Date	: 8/1	6/2018	S	eqNo: 1	763662	Units: <b>mg/L</b>	CaCO3		
Analyte		Result F	QL :	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity	(as CaCO3	) 80.12 2	0.00	80.00	0	100	90	110			

- \* 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
- PQL Practical Quanitative Limit
- 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
- Page 22 of 22

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

### 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:	ANDEAVOR BLOOMFIEL	Work Order Num	ber: 1808728		RcptNo: 1	
Received By:	Isaiah Ortiz	8/11/2018 10:30-00		IG	-	
		8/11/2010 10:30:00				
Completed By:	TAB 08/14/1	8/13/2018 9:57:357 X	AM	anne In	~	
Reviewed By: Labeled	164. 10 081	14/18				
<u>Chain of Cus</u>	tody	-				
1. Is Chain of C	ustody complete?		Yes 🗹	No 🗌	Not Present	
2. How was the	sample delivered?					
<u>Log In</u>				_	_	
3. Was an attem	npt made to cool the samples?		Yes 🗹	No	NA	
4. Were all sam	ples received at a temperature	of >0° C to 6.0°C	Yes 🔽	No 🗌		
5. Sample(s) in	proper container(s)?		Yes 🔽	No 🗌		
6. Sufficient sam	ple volume for indicated test(s	)?	Yes 🔽	No 🗌		
7. Are samples (	except VOA and ONG) proper	y preserved?	Yes 🔽	No 🗌		
8. Was preserva	tive added to bottles?		Yes 🗌	No 🗹	NA 🗆	
9. VOA vials hav	e zero headspace?		Yes 🗹	No 🗆	No VOA Vials	
10. Were any sar	nple containers received broke	n?	Yes 🗌	No 🗹 🛛	# of processed	
			_		bottles checked	
11. Does paperwo (Note discreps	ork match bottle labels?		Yes 🗹	No 🗔	for pH: 6	less noted)
12 Are matrices of	correctly identified on Chain of	Custodv?	Yes 🔽	No 🗆	Adjusted? NO	
13. Is it clear what	t analyses were requested?		Yes 🗹	No 🗌		1 1
14. Were all holdin (If no, notify cu	ng times able to be met? ustomer for authorization.)		Yes 🗹	No 🗆 🛛	Checked by: <u>10</u>	8 14 18
Special Handl	ing (if applicable)					
15. Was client no	tified of all discrepancies with	this order?	Yes	No 🗌	NA 🗹	
Person	Notified:	Date				
By Who	om:	Via:	eMail Pl	hone 📋 Fax	In Person	
Regard	ing:			Alexandri Alexandri anda da		
Client Ir	nstructions:					
16. Additional rel	marks:					
CUSTO	DOY SEALS INTACT ON ALL S	SAMPLE BOTTLES. P	ER TP 1 REPORT	/at 8/13/18		
47						

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			

		ield Terminal X Standard D Rush ANALYSIS LABORATORY	Project Name: San Juan River Bluff	Date: 8 - 9 - 7 - 78 4901 Hawkins NE - Albuquerque, NM 87109	NM 87413 Project #: Annual Event Tel. 505-345-3975 Fax 505-345-4107	3 PO# 12623266 Analysis Request	@Andeavor.com Project Manager. Allen Hains	8 C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C B C C C C B C C C B C C C C B C C C C C B C	el 4 (Full Validation)				nple   Request ID     Type and #   Type     Type   BTEX+MTB     BTEX+MTB   BTEX+MTB     Type and #   Type     Type   BTEX+MTB     Type and #   Type     Type   BTEX+MTB     BTEX+MTB   BTEX+MTB     BTEX+MTB   BTEX+MTB     Type   BTEX+MTB     Type   BTEX+MTB     Type   BTEX+MTB     BTEX+MTB   BTEX+MTB  <	ast Outfall #3 40mi VOA-5 HCI * -20 X	250 mf HNO <sub>3</sub> Zd X	125 ml HNO <sub>3</sub> 70 X	125 ml H <sub>2</sub> SO <sub>4</sub> ZO	500 ml Neat -Col X X				
Custody Docord	-custody Record Lun	r - Bloomfield Terminal X	Proj	0 CR 4990 Date	oomfield, NM 87413 Proj	5-534-1483 PO	en.S.Hains@Andeavor.com Proj		X Level 4 (Full Validation)	Sam	XCEL On I	Sam	atrix Sample Request ID Co	I <sub>2</sub> O East Outfall #3 40m	2 pl					 ·	buutabaad buu	
Chain_Of		Client: Andeavo		Mailing Address: 5	ā	Phone #: 91	email or Fax#: All	QA/QC Package:	Standard	□ Other	X EDD (Type) E)		Date Time M	7.9.18 1410 H						 -	Dato: Timo: Doli	3/e/18   17 co   3

		┙ݤ							(	N 10	×۷)	səlqqn	Air B	/											- <u>-</u> .
1								1) x (1			d - '		บอก			-				-		-	-	es	
	ĺ		5	001	3		Ĕ	sue	oin/	7 - 1	ພອ	eral Ch	ແອງ	<u> </u>			×				 		+	Jalyt	
			5	187	4107					(∀		-imə2) (	0228			-		+			+	_		let Al	
	Q	5			345-	lest	١٨	no 38T		(ЭТ	8 (Y	/ON) 80	978	×	┢		<u>+</u>	1						Targ	
		¥ _			505-	Real	ŝ	S PCB's	2808	3/5	səpi	Pestic	808	<u> </u>				-						and	
		> V	inon		Xe	sis F				SIB	jeľv	pəvio	ssiQ			×			<u> </u>	$\square$		+	-	spoi	
	Ī	۵Š	lenv	allo -		nalv		slete	M e	qq	vers	roceA li	bio⊺		×		1						<u> </u>	Meth	
		╡┛		- ⊔N	975	A		(SI/	lisc	22	8 10	0168)	Н∀Ч										1-	tical	
				cins.	45-3				()	·Þ0	g po	odtəM) 8	EDB											naly	
				Hawk	05-3				()	.8L	4 p	odteM)	НЧТ											ee A	
				901	ີ [ ອີ		(	O/MRC	<u>א</u> ם/	O7	(GI	89158	HqT		<u> </u>									S S	
				4	-		(,	Klno se	'9)⊦	ЧЦТ	.+∃	atm+x	378		ļ									nark	
ĩ					<u> </u>			(1208	)s'8	IMT MT	+=: T	etm+x:	<u>ata</u>					[				-		Rer	
			River Bluff				ins			No		HEAL No.	108728	202	<b>2</b> 02	202	202	202						Date Time	Date Time
2	ime:	□ Rush_	San Juan I	8 - 10 - 16	ual Event	<u>66</u>	er: Allen Ha		racy Payne	KYes 🗆	rature:   🦰	reservative Tvne	<u>J</u>	HCI	HNO <sub>3</sub>	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	Neat						S. S.	
	Turn-Around T	X Standard	Project Name:	Date:	Project #: Anr	PO# 126232	Project Manag		Sampler: T	On Ice:	Sample Tempe	Container F Tvne and #	" pup od (	40ml VOA-5	250 ml plastic-1	125 ml plastic-1	125 ml plastic-1	500 ml plastic-1						Received by:	Received by:
-	ustody kecord	Bloomfield Terminal		CR 4990	mfield, NM 87413	534-1483	.S.Hains@Andeavor.com	X Level 4 (Full Validation)				x Sample Request ID		East Outfall #2										shed by:	thed by:
(	-10-L	eavor -		ss: <b>50 C</b>	Bloor	915-5	Allen.	ö		EXCE		Matrix		5 H <sub>2</sub> 0											Relinquis
	Unall	And		g Addre:		;#:	or Fax#:	: Package Indard	ler	D (Type)		Time		> 0745											Time:
		Client		Mailin		Phone	email	QA/QC	□ Oth	×ED		Date		B/vd/16					1				   	B/10/18	Date:

		۲ ۲								(N		<u>لا</u>	səldduð	Air				 	、				_		ŝS.	
ц Ч	ł		) 1	_																	_				Analyte	
2	ll S			7109	27																				get ∕	
v l			E	IM 8.	5-410	t					(∀(	CV-	imə2) 07	28											Tarç	
		2 Z	tal.c	∩e, ⊃	5-346	sant	١	uo 3	aTI	N'X	3TE	3 (A	OV) 808	826	×		 								and	
		15		nerqi	505	Rec	s	CB	1 Z	808	/ S	əbi	oitee9 h6	308											ods	
			viror	ıbnql	Fax .	lysis	(	′0Sʻ <sup>i</sup>	′0c	l' <sup>z</sup> O	N <sup>*€</sup> (	DN'I	D, A) enoi	inΑ			 								/leth	
	L		allen	Υ -	ഹ	Ana					5	slete	эM 8 АЯ:	ЭЯ											cal N	
	- 2	Į	w.h	N N N	-397:			(9	SM		128	3 10	H (8310	<u>44</u>		• •					_				alyti	
		ÌĀ	۶ ۱	vkins	-345						7US	s po	Menn) H											_	An An	
	_			1 Hay	505		(0	MK	(0)	10/0		ອ)	89L08 H		×	×	 	 		_				_	See	
				490,	Tel.		(/	۸juo	SP	Э)Н	Ы	+3		<u></u>	~		:			_					arks:	
								(12	08)	s'B	MT	+38	EX+MTE	<u>та</u>								-			Sem.	<b>)</b>
[			S												M	ε									<u> </u>	
			rvation We				us				No		HEAL No.	82180	20	2									Date Time	Date Time
		ush	Obse	<u>.</u>	/ent		n Hai			ayne			e e e	8			 	 			_				4	
	Time:	D R	e: NBB -	0-0	nual Ev	3266	ager: Alle			Tracy F	⊠rYes	perature:	Preservat Type		HCI	Neat	 	 							<b>U</b> NCA	
	Turn-Around	X Standard	Project Nam	Date:	Project #: AI	PO# 1262;	Project Mana	1		Sampler:	On Ice:	Sample Tem	Container Type and #		40ml VOA-5	250 ml amber-1									Received by: H.O.H.	Received by:
	ody Record	mfield Terminal		06	d, NM 87413	483	ins@Andeavor.com		-evel 4 (Full Validation)				sample Request ID	1 23410	OW BENDE										. 1	
	f-Cust	ır - Bloo		0 CR 45	oomfiel	5-534-1	len.S.Ha		×		XCEL		latrix 5		+ <sub>2</sub> 0										linquished by	linquished by
	ain-oi	Andeavo		Vddress: E		6	Fax#: AI	ackage:	ard		Type) E		Time		0840										ime: Re [ <b>700</b>	ime: Re
I	ັບ	Client:		Mailing A		Phone #:	email or	QA/QC PE	□ Stand	□ Other	X EDD (		Date		3/0/g											Date: T

### TABLE 2

### Analytical Methods and Target Analytes Facility-Wide Groundwater Monitoring Plan - June 2017 Western Refining Southwest, Inc. - Bloomfield Refinery

VOCa (EDA Mathed 9260D) (1)		
Toward List	I otal Recoverable Metals (E)	PA Method 6010B/7470)
- Target List	- l'arget List (not applicable to	River Terrace Sampling Events)
Benzene	Arsenic	Lead
Toluene	Barium	Mercury
Ethylbenzene	Cadmium	Selenium
Xylenes	Chromium	Silver
Methyl tert butyl ether (MTBE)	- Target List (for River Terrace	Sampling Events Only)
SVOCs - (EPA Method 8270)	Lead	
- Method List	Mercury (DW-1 ON	VLY)
TPH-GRO (EPA Method 8015B)		
- Gasoline Range Organics	Dissolved Metals (EPA Metho	od 6010B / 7470)
TPH-DRO (EPA Method 8015B)	- Target List (for Refinery Con	nplex, Outfalls, and River)
- Diesel Range Organics	Arsenic	Manganese
- Motor Oil Range Organics	Barium	Mercury
Total Carbon Dioxide (Laboratory Calculated)	Cadmium	Potassium
- Dissolved CO2	Calcîum	Selenium
Specific Conductivity (EPA Method 120.1 or field measurement)	Chromium	Silver
- Specific conductance	Copper	Sodium
TDS (EPA Method 160.1 or field measurement)	Iron	Uranium
- Total dissolved solids	Lead	Zinc
General Chemistry - Anions (EPA Method 300.0)	Magnesium	
Fluoride	- C	
Chloride		
Bromide	TPH = total petroleum hydroca	rbons
Nitrogen, Nitrite (as N)	GRO = gasoline range organics	3
Nitrogen, Nitrate (as N)	VOCs = volatile organic compo	ounds
Phosphorous, Orthophosphate (As P)	DRO = diesel range organics	
Sulfate	TDS = total dissolved solids	
General Chemistry - Alkalinity (EPA Method 310.1)		
Alkalinity, Total		
Carbonate		
Bicarbonate		

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 Piezomenter 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: <u>www.hallenvironmental.com</u>

September 11, 2018

Allen Hains Andeavor Bloomfield 111 CR 4990 Bloomfield, NM 87413 TEL: (915) 534-1483 FAX

OrderNo.: 1808812

RE: River Terrace 8 13 18

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 11 sample(s) on 8/14/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data 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 #NM0901

Sincerely,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Date Reported: 9/11/2018

CLIENT: Andeavor Bloomfield Project: River Terrace 8 13 18 Client Sample ID: MW-49 Collection Date: 8/13/2018 8:10:00 AM

Lab ID: 1808812-001 Matrix: AQUEOUS Received Date: 8/14/2018 7:00:00 AM Result **PQL** Qual Units **DF** Date Analyzed Batch Analyses **EPA METHOD 8015D: DIESEL RANGE** Analyst: Irm 8/17/2018 11:03:00 PM 39845 **Diesel Range Organics (DRO)** ND 0.40 mg/L 1 Motor Oil Range Organics (MRO) ND 2.5 mg/L 8/17/2018 11:03:00 PM 39845 1 %Rec Surr: DNOP 8/17/2018 11:03:00 PM 39845 81.3 76.6-135 1 **EPA 6010B: TOTAL RECOVERABLE METALS** Analyst: pmf Lead ND 0.0050 mg/L 1 8/20/2018 11:33:52 AM 39852 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: AG 8/21/2018 3:45:05 PM Gasoline Range Organics (GRO) ND 0.050 B53589 mg/L 1 Surr: BFB 104 70-130 %Rec 8/21/2018 3:45:05 PM B53589 1 **EPA METHOD 8260: VOLATILES SHORT LIST** Analyst: AG ND 8/21/2018 3:45:05 PM D53589 Benzene 1.0 µg/L 1 Toluene ND 8/21/2018 3:45:05 PM D53589 1.0 µg/L 1 Ethylbenzene ND 1.0 µg/L 8/21/2018 3:45:05 PM D53589 1 Methyl tert-butyl ether (MTBE) ND D53589 1.0 µg/L 1 8/21/2018 3:45:05 PM Xylenes, Total ND 1.5 µg/L 1 8/21/2018 3:45:05 PM D53589 Surr: 4-Bromofluorobenzene 117 70-130 %Rec 1 8/21/2018 3:45:05 PM D53589 Surr: Toluene-d8 70-130 %Rec D53589 96.9 1 8/21/2018 3:45:05 PM

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

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- D Sample Difuted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 1 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 9/11/2018

Hall Environmental Analysis I	Laboratory, Inc.
-------------------------------	------------------

CLIENT: A	Andeavor Bloomfield	Client Sample ID: TP-8	
Project: R	River Terrace 8 13 18	<b>Collection Date:</b> 8/13/2018 9:00:00	AM
Lab ID: 18	808812-002	Matrix: AQUEOUS     Received Date: 8/14/2018 7:00:00	AM
Lab ID: 18	808812-002	Matrix: AQUEOUS Received Date: 8/14/2018 7:00:0	)0

Result	PQL	Qual Units	DF	Date Analyzed	Batch
				Analyst	Irm
ND	0.40	mg/L	1	8/18/2018 12:09:00 AM	39845
ND	2.5	mg/L	1	8/18/2018 12:09:00 AM	39845
83.1	76.6-135	%Rec	1	8/18/2018 12:09:00 AM	39845
				Analyst	pmf
0.0068	0.0050	mg/L	1	8/22/2018 3:59:34 PM	39852
				Analyst	AG
2.1	0.25	mg/L	5	8/21/2018 4:54:56 PM	B53589
90.0	70-130	%Rec	5	8/21/2018 4:54:56 PM	B53589
				Analyst	AG
ND	5.0	µg/L	5	8/21/2018 4:54:56 PM	D53589
ND	5.0	µg/L	5	8/21/2018 4:54:56 PM	D53589
ND	5.0	µg/L	5	8/21/2018 4:54:56 PM	D53589
ND	5.0	µg/L	5	8/21/2018 4:54:56 PM	D53589
ND	7.5	µg/L	5	8/21/2018 4:54:56 PM	D53589
101	70-130	%Rec	5	8/21/2018 4:54:56 PM	D53589
96.4	70-130	%Rec	5	8/21/2018 4:54:56 PM	D53589
	ND       ND       83.1       0.0068       2.1       90.0       ND       ND       ND       ND       ND       ND       ND       ND       ND       90.4	Result     PQL       ND     0.40       ND     2.5       83.1     76.6-135       0.0068     0.0050       2.1     0.25       90.0     70-130       ND     5.0       ND     7.5       101     70-130       96.4     70-130	Result     PQL     Qual     Units       ND     0.40     mg/L       ND     2.5     mg/L       83.1     76.6-135     %Rec       0.0068     0.0050     mg/L       2.1     0.25     mg/L       90.0     70-130     %Rec       ND     5.0     µg/L       ND     7.5     µg/L       ND     7.5     µg/L       ND     7.130     %Rec	Result     PQL     Qual     Units     DF       ND     0.40     mg/L     1       ND     2.5     mg/L     1       83.1     76.6-135     %Rec     1       0.0068     0.0050     mg/L     1       2.1     0.25     mg/L     5       90.0     70-130     %Rec     5       ND     5.0     µg/L     5       ND     7.5     µg/L     5       ND     7.5     µg/L     5       101     70-130     %Rec     5       96.4     70-130     %Rec     5	Result     PQL     Qual     Onts     DF     Date Analyzed       ND     0.40     mg/L     1     8/18/2018 12:09:00 AM       ND     2.5     mg/L     1     8/18/2018 12:09:00 AM       83.1     76.6-135     %Rec     1     8/18/2018 12:09:00 AM       83.1     76.6-135     %Rec     1     8/18/2018 12:09:00 AM       0.0068     0.0050     mg/L     1     8/22/2018 12:09:00 AM       0.0068     0.0050     mg/L     1     8/21/2018 3:59:34 PM       Analyst     Mg/L     5     8/21/2018 4:54:56 PM       90.0     70-130     µg/L     5     8/21/2018 4:54:56 PM       ND     5.0     µg/L     5     8/21/2018 4:54:56 PM       ND

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

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
- PQL Practical Quanitative Limit
- 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 Page 2 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/11/2018

CLIENT: A	Andeavor Bloomfield	Client Sample ID: TP-6	
Project: R	River Terrace 8 13 18	<b>Collection Date:</b> 8/13/2018 9:45:00 A	Μ
Lab ID: 1	808812-003	Matrix: AQUEOUS     Received Date: 8/14/2018 7:00:00 A	М

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE					Analyst	: Irm
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	8/21/2018 4:13:45 AM	39845
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	8/21/2018 4:13:45 AM	39845
Surr: DNOP	81.2	76.6-135	%Rec	1	8/21/2018 4:13:45 AM	39845
EPA 6010B: TOTAL RECOVERABLE METALS					Analyst	: pmf
Lead	ND	0.0050	mg/L	1	8/22/2018 4:01:26 PM	39852
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	0.82	0.050	mg/L	1	8/21/2018 6:04:30 PM	B53589
Surr: BFB	112	70-130	%Rec	1	8/21/2018 6:04:30 PM	B53589
EPA METHOD 8260: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	1.0	µg/L	1	8/21/2018 6:04:30 PM	D53589
Toluene	ND	1.0	µg/L	1	8/21/2018 6:04:30 PM	D53589
Ethylbenzene	ND	1.0	μg/L	1	8/21/2018 6:04:30 PM	D53589
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/21/2018 6:04:30 PM	D53589
Xylenes, Total	ND	1.5	µg/L	1	8/21/2018 6:04:30 PM	D53589
Surr: 4-Bromofluorobenzene	125	70-130	%Rec	1	8/21/2018 6:04:30 PM	D53589
Surr: Toluene-d8	100	70-130	%Rec	1	8/21/2018 6:04:30 PM	D53589

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

- \* 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
- PQL Practical Quanitative Limit
- 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 Page 3 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 9/11/2018

CLIENT:	Andeavor Bloomfield	<b>Client Sample ID:</b> MW-48
Project:	River Terrace 8 13 18	Collection Date: 8/13/2018 10:25:00 AM
Lab ID:	1808812-004	Matrix: AQUEOUS Received Date: 8/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE					Analyst	: Irm
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	8/21/2018 4:38:06 AM	39845
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	8/21/2018 4:38:06 AM	39845
Surr: DNOP	77.4	76.6-135	%Rec	1	8/21/2018 4:38:06 AM	39845
EPA 6010B: TOTAL RECOVERABLE METALS					Analyst	: pmf
Lead	0.012	0.0050	mg/L	1	8/22/2018 4:03:07 PM	39852
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	0.29	0.050	mg/L	1	8/21/2018 6:27:35 PM	B53589
Surr: BFB	102	70-130	%Rec	1	8/21/2018 6:27:35 PM	B53589
EPA METHOD 8260: VOLATILES SHORT LIST					Analyst	AG
Benzene	ND	1.0	µg/L	1	8/21/2018 6:27:35 PM	D53589
Toluene	ND	1.0	µg/L	1	8/21/2018 6:27:35 PM	D53589
Ethylbenzene	ND	1.0	µg/L	1	8/21/2018 6:27:35 PM	D53589
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/21/2018 6:27:35 PM	D53589
Xylenes, Total	ND	1.5	µg/L	1	8/21/2018 6:27:35 PM	D53589
Surr: 4-Bromofluorobenzene	115	70-130	%Rec	1	8/21/2018 6:27:35 PM	D53589
Surr: Toluene-d8	96.3	70-130	%Rec	1	8/21/2018 6:27:35 PM	D53589

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

- \* 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
- PQL Practical Quanitative Limit
- 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 Page 4 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

**Analytical Report** Lab Order 1808812 Date Reported: 9/11/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield **Project:** River Terrace 8 13 18

1808812-005

Lab ID:

Client Sample ID: Collection Gallery Collection Date: 8/13/2018 11:10:00 AM Received Date: 8/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE					Analyst	: Irm
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	8/21/2018 5:02:30 AM	39845
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	8/21/2018 5:02:30 AM	39845
Surr: DNOP	77.4	76.6-135	%Rec	1	8/21/2018 5:02:30 AM	39845
EPA 6010B: TOTAL RECOVERABLE METALS					Analyst	: pmf
Lead	ND	0.0050	mg/L	1	8/20/2018 11:41:00 AM	39852
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	0.22	0.050	mg/L	1	8/21/2018 6:50:50 PM	B53589
Surr: BFB	103	70-130	%Rec	1	8/21/2018 6:50:50 PM	B53589
EPA METHOD 8260: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	1.0	µg/L	1	8/21/2018 6:50:50 PM	D53589
Toluene	ND	1.0	μg/L	1	8/21/2018 6:50:50 PM	D53589
Ethylbenzene	ND	1.0	μg/L	1	8/21/2018 6:50:50 PM	D53589
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	8/21/2018 6:50:50 PM	D53589
Xylenes, Total	ND	1.5	μg/L	1	8/21/2018 6:50:50 PM	D53589
Surr: 4-Bromofluorobenzene	117	70-130	%Rec	1	8/21/2018 6:50:50 PM	D53589
Surr: Toluene-d8	95.3	70-130	%Rec	1	8/21/2018 6:50:50 PM	D53589

Matrix: AQUEOUS

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

- \* Value exceeds Maximum Contaminant Level. D
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 5 of 17 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Date Reported: 9/11/2018

CLIENT: Andeavor BloomfieldProject: River Terrace 8 13 18Lab ID: 1808812-006	Client Sample ID: Trip Blank Collection Date: Matrix: AQUEOUS Received Date: 8/14/2018 7:00:00 AM							
Analyses	Result	PQL	Qual Units	DF	<b>Date Analyzed</b>	Batch		
EPA METHOD 8015D: GASOLINE RANG	3E				Analyst	AG		
Gasoline Range Organics (GRO)	0.086	0.050	mg/L	1	8/21/2018 7:13:55 PM	B53589		
Surr: BFB	105	70-130	%Rec	1	8/21/2018 7:13:55 PM	B53589		
EPA METHOD 8260: VOLATILES SHOR	T LIST				Analyst	AG		
Benzene	ND	1.0	µg/L	1	8/21/2018 7:13:55 PM	D53589		
Toluene	ND	1.0	µg/L	1	8/21/2018 7:13:55 PM	D53589		
Ethylbenzene	ND	1.0	µg/L	1	8/21/2018 7:13:55 PM	D53589		
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/21/2018 7:13:55 PM	D53589		
Xylenes, Total	ND	1.5	µg/L	1	8/21/2018 7:13:55 PM	D53589		
Surr: 4-Bromofluorobenzene	118	70-130	%Rec	1	8/21/2018 7:13:55 PM	D53589		
Surr: Toluene-d8	96.4	70-130	%Rec	1	8/21/2018 7:13:55 PM	D53589		

### Hall Environmental Analysis Laboratory, Inc.

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

- \* Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 6 of 17 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1808812 Date Reported: 9/11/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Andeavor Bloomfield

Project:River Terrace 8 13 18Lab ID:1808812-007Matrix: AQUEOUS

Client Sample ID: FIELD BLANK #4 Collection Date: 8/13/2018 11:30:00 AM Received Date: 8/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE					Analyst	: Irm
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	8/21/2018 5:26:50 AM	39845
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	8/21/2018 5:26:50 AM	39845
Surr: DNOP	89.2	76.6-135	%Rec	1	8/21/2018 5:26:50 AM	39845
EPA 6010B: TOTAL RECOVERABLE METALS					Analyst	: pmf
Lead	ND	0.0050	mg/L	1	8/22/2018 4:04:48 PM	39852
EPA METHOD 8015D: GASOLINE RANGE					Analyst	AG
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/21/2018 7:37:11 PM	B53589
Surr: BFB	104	70-130	%Rec	1	8/21/2018 7:37:11 PM	B53589
EPA METHOD 8260: VOLATILES SHORT LIST					Analyst	AG
Benzene	ND	1.0	µg/L	1	8/21/2018 7:37:11 PM	D53589
Toluene	ND	1.0	µg/L	1	8/21/2018 7:37:11 PM	D53589
Ethylbenzene	ND	1.0	μg/L	1	8/21/2018 7:37:11 PM	D53589
Methyl tert-butyl ether (MTBE)	ND	1.0	μg/L	1	8/21/2018 7:37:11 PM	D53589
Xylenes, Total	ND	1.5	μg/L	1	8/21/2018 7:37:11 PM	D53589
Surr: 4-Bromofluorobenzene	117	70-130	%Rec	1	8/21/2018 7:37:11 PM	D53589
Surr: Toluene-d8	96.9	70-130	%Rec	1	8/21/2018 7:37:11 PM	D53589

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

- \* 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
- PQL Practical Quanitative Limit
- 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 Page 7 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/11/2018

• .

D

CLIENT:	Andeavor Bloomfield	Client Sample ID: DW-3	
Project:	River Terrace 8 13 18	Collection Date: 8/13/2018 12:40:00 PM	
Lab ID:	1808812-008	Matrix: AQUEOUS Received Date: 8/14/2018 7:00:00 AM	

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE					Analyst	: Irm
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	8/18/2018 1:59:00 AM	39845
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	8/18/2018 1:59:00 AM	39845
Surr: DNOP	81.5	76.6-135	%Rec	1	8/18/2018 1:59:00 AM	39845
EPA 6010B: TOTAL RECOVERABLE METALS					Analyst	: pmf
Lead	0.0091	0.0050	mg/L	1	8/22/2018 4:06:37 PM	39852
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	1.5	0.050	mg/L	1	8/21/2018 10:18:47 PM	B53589
Surr: BFB	95.7	70-130	%Rec	1	8/21/2018 10:18:47 PM	B53589
EPA METHOD 8260: VOLATILES SHORT LIST					Analyst	: AG
Benzene	9.5	1.0	µg/L	1	8/21/2018 10:18:47 PM	D53589
Toluene	ND	1.0	μg/L	1	8/21/2018 10:18:47 PM	D53589
Ethylbenzene	32	1.0	µg/L	1	8/21/2018 10:18:47 PM	D53589
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/21/2018 10:18:47 PM	D53589
Xylenes, Total	170	1.5	µg/L	1	8/21/2018 10:18:47 PM	D53589
Surr: 4-Bromofluorobenzene	107	70-130	%Rec	1	8/21/2018 10:18:47 PM	D53589
Surr: Toluene-d8	94.1	70-130	%Rec	1	8/21/2018 10:18:47 PM	D53589

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

- \* 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
- PQL Practical Quanitative Limit
- 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 Page 8 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/11/2018

CLIENT:	Andeavor Bloomfield	Client Sample ID: DW-2
Project:	River Terrace 8 13 18	Collection Date: 8/13/2018 1:35:00 PM
Lab ID:	1808812-009	Matrix: AQUEOUS Received Date: 8/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE					Analyst	: Irm
Diesel Range Organics (DRO)	ND	0.40	mg/L	1	8/18/2018 2:21:01 AM	39845
Motor Oil Range Organics (MRO)	ND	2.5	mg/L	1	8/18/2018 2:21:01 AM	39845
Surr: DNOP	77.6	76.6-135	%Rec	1	8/18/2018 2:21:01 AM	39845
EPA 6010B: TOTAL RECOVERABLE METALS					Analyst	: pmf
Lead	0.016	0.0050	mg/L	1	8/22/2018 4:08:18 PM	39852
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	0.21	0.050	mg/L	1	8/21/2018 10:41:45 PM	B53589
Surr: BFB	107	70-130	%Rec	1	8/21/2018 10:41:45 PM	B53589
EPA METHOD 8260: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	1.0	µg/L	1	8/21/2018 10:41:45 PM	D53589
Toluene	ND	1.0	µg/L	1	8/21/2018 10:41:45 PM	D53589
Ethylbenzene	ND	1.0	µg/L	1	8/21/2018 10:41:45 PM	D53589
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/21/2018 10:41:45 PM	D53589
Xylenes, Total	ND	1.5	µg/L	1	8/21/2018 10:41:45 PM	D53589
Surr: 4-Bromofluorobenzene	120	70-130	%Rec	1	8/21/2018 10:41:45 PM	D53589
Surr: Toluene-d8	96.2	70-130	%Rec	1	8/21/2018 10:41:45 PM	D53589

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

- \* 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
- PQL Practical Quanitative Limit
- 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 Page 9 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1808812 Date Reported: 9/11/2018

CLIENT:	Andeavor Bloomfield	Client Sample ID: DUP #4									
Project:	River Terrace 8 13 18 1808812-010		Collection Date: 8/13/2018								
Lab ID:		Matrix:	AQUEOUS		Received Date: 8/14/2018 7:00:00 AM						
Analyses		Re	esult	PQL	Qual	Units	DF	Date Analyzed	Batch		
EPA MET	THOD 8015D: DIESEL RANG	E						Analyst	Irm		
Diesel Range Organics (DRO)			ND	0.40		mg/L	1	8/21/2018 5:51:12 AM	39845		
Motor Oil Range Organics (MRO)			ND	2.5		mg/L	1	8/21/2018 5:51:12 AM	39845		
Surr: DNOP			74.9	76.6-135	S	%Rec	1	8/21/2018 5:51:12 AM	39845		
EPA 601	0B: TOTAL RECOVERABLE	METALS						Analyst	pmf		
Lead			ND	0.0050		mg/L	1	8/22/2018 4:09:59 PM	39852		
EPA MET	THOD 8015D: GASOLINE RA	NGE						Analyst	AG		
Gasoline	e Range Organics (GRO)		0.22	0.050		mg/L	1	8/21/2018 11:04:45 PM	B53589		
Surr: I	BFB		104	70-130		%Rec	1	8/21/2018 11:04:45 PM	B53589		
EPA MET	THOD 8260: VOLATILES SHO	ORT LIST						Analyst	AG		
Benzene	9		ND	1.0		µg/L	1	8/21/2018 11:04:45 PM	D53589		
Toluene			ND	1.0		µg/L	1	8/21/2018 11:04:45 PM	D53589		
Ethylben	izene		ND	1.0		µg/L	1	8/21/2018 11:04:45 PM	D53589		
Methyl te	ert-butyl ether (MTBE)		ND	1.0		µg/L	1	8/21/2018 11:04:45 PM	D53589		
Xylenes,	Total		ND	1.5		µg/L	1	8/21/2018 11:04:45 PM	D53589		
Surr: 4	4-Bromofluorobenzene		117	70-130		%Rec	1	8/21/2018 11:04:45 PM	D53589		
Surr:	Toluene-d8		91.3	70-130		%Rec	1	8/21/2018 11:04:45 PM	D53589		

Hall Environmental Analysis Laboratory, Inc.

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

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- D Sample Diluted Due to Maurix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 10 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
**Analytical Report** Lab Order 1808812

Date Reported: 9/11/2018

CLIENT: Andeavor Bloomfield Project: River Terrace 8 13 18 Lab ID: 1808812-011	Client Sample ID: Trip Blank         Collection Date:         Matrix: AQUEOUS       Received Date: 8/14/2018 7:00:00 AM											
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch						
EPA METHOD 8015D: GASOLINE RANG	ЭЕ				Analyst:	AG						
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/21/2018 11:27:55 PM	B53589						
Surr: BFB	102	70-130	%Rec	1	8/21/2018 11:27:55 PM	B53589						
EPA METHOD 8260: VOLATILES SHOR	T LIST				Analyst:	AG						
Benzene	ND	1.0	µg/L	1	8/21/2018 11:27:55 PM	D53589						
Toluene	ND	1.0	µg/L	1	8/21/2018 11:27:55 PM	D53589						
Ethylbenzene	ND	1.0	µg/L	1	8/21/2018 11:27:55 PM	D53589						
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1	8/21/2018 11:27:55 PM	D53589						
Xylenes, Total	ND	1.5	µg/L	1	8/21/2018 11:27:55 PM	D53589						
Surr: 4-Bromofluorobenzene	114	70-130	%Rec	1	8/21/2018 11:27:55 PM	D53589						
Surr: Toluene-d8	90.7	70-130	%Rec	1	8/21/2018 11:27:55 PM	D53589						

### Hall Environmental Analysis Laboratory, Inc.

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 11 of 17 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

11-Sep-18

	avor Bloomfield							
Project: River	Terrace 8 13 18							
			Taak					
	Simis Sampiype: N	15	Test	Jode: EPA Metho	a 8015D: Diese	el Range		
Client ID: MW-49	Batch ID: 3	9845	Ru	unno: <b>53521</b>				
Prep Date: 8/16/2018	Analysis Date:	8/17/2018	Se	eqNo: <b>1764715</b>	Units: mg/L			
Analyte	Result PQL	SPK value	SPK Ref Val	%REC LowLimi	t HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.6 0.40	2.500	0	104 89.6	6 145			
Surr: DNOP	0.19	0.2500		74.4 76.6	5 135			S
Sample ID 1808812-001E	SMSD SampType: N	ISD	Test	Code: EPA Metho	d 8015D: Diese	el Range		
Client ID: MW-49	Batch ID: 3	9845	Ru	unNo: <b>53521</b>				
Prep Date: 8/16/2018	Analysis Date:	8/17/2018	Se	eqNo: <b>1764716</b>	Units: <b>mg/L</b>			
Analyte	Result PQL	SPK value	SPK Ref Val	%REC LowLimi	t HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.2 0.40	) 2.500	0	88.9 89.6	6 145	15.5	20	S
Surr: DNOP	0.16	0.2500		62.3 76.6	6 135	0	0	S
Sample ID LCS-39845	SampType: L	cs	Test	Code: EPA Metho	d 8015D: Diese	el Range		
Client ID: LCSW	Batch ID: 3	9845	Ru	unNo: <b>53521</b>				
Prep Date: 8/16/2018	Analysis Date:	8/17/2018	Se	eqNo: <b>1764725</b>	Units: <b>mg/L</b>			
Analyte	Result PQL	SPK value	SPK Ref Val	%REC LowLimi	t HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.3 0.40	2.500	0	92.3 76.5	5 158			
Surr: DNOP	0.17	0.2500		66.0 76.6	6 135			S
Sample ID MB-39845	SampType: N	IBLK	Test	Code: EPA Metho	d 8015D: Diese	el Range		
Client ID: PBW	Batch ID: 3	9845	Ru	unNo: <b>53521</b>				
Prep Date: 8/16/2018								
	Analysis Date:	8/17/2018	Se	eqNo: 1764726	Units: <b>mg/L</b>			
Analyte	Analysis Date: 4 Result PQL	8/17/2018 SPK value	Se SPK Ref Val	eqNo: <b>1764726</b> %REC LowLimi	Units: <b>mg/L</b> t HighLimit	%RPD	RPDLimit	Qual
Analyte Diesel Range Organics (DRO)	Analysis Date: 4 Result PQL ND 0.40	B/17/2018 SPK value	Se SPK Ref Val	eqNo: <b>1764726</b> %REC LowLimi	Units: <b>mg/L</b> t HighLimit	%RPD	RPDLimit	Qual
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO)	Analysis Date: 4 Result PQL ND 0.40 ND 2.5	8/17/2018 SPK value	Se SPK Ref Val	eqNo: <b>1764726</b> %REC LowLimi	Units: <b>mg/L</b> t HighLimit	%RPD	RPDLimit	Qual
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP	Analysis Date: 4 Result PQL ND 0.40 ND 2.5 0.44	3/17/2018 SPK value 5 0.5000	Se SPK Ref Val	eqNo: <b>1764726</b> %REC LowLimi 88.5 76.6	Units: <b>mg/L</b> t HighLimit	%RPD	RPDLimit	Qual
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP Sample ID MB-39932	Analysis Date: 4 Result PQL ND 0.40 ND 2.5 0.44 SampType: <b>N</b>	3/17/2018 SPK value 0 0.5000 IBLK	Se SPK Ref Val Test0	eqNo: <b>1764726</b> %REC LowLimi 88.5 76.6 Code: <b>EPA Metho</b>	Units: <b>mg/L</b> t HighLimit 3 135 d 8015D: Diese	%RPD	RPDLimit	Qual
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP Sample ID MB-39932 Client ID: PBW	Analysis Date: 4 Result PQL ND 0.40 ND 2.5 0.44 SampType: <b>N</b> Batch ID: <b>3</b>	8/17/2018 SPK value 0 0.5000 IBLK 9932	Se SPK Ref Val Test0 Ru	eqNo: <b>1764726</b> %REC LowLimi 88.5 76.6 Code: <b>EPA Metho</b> unNo: <b>53705</b>	Units: <b>mg/L</b> t HighLimit 3 135 d 8015D: Diese	%RPD	RPDLimit	Qual
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP Sample ID <b>MB-39932</b> Client ID: <b>PBW</b> Prep Date: <b>8/22/2018</b>	Analysis Date: 4 Result PQL ND 0.40 ND 2.5 0.44 SampType: N Batch ID: 3 Analysis Date: 4	8/17/2018 SPK value 0 0.5000 IBLK 9932 8/25/2018	Se <u>SPK Ref Val</u> Test0 Ru Se	eqNo: 1764726 %REC LowLimi 88.5 76.6 Code: EPA Metho unNo: 53705 eqNo: 1771536	Units: mg/L t HighLimit 3 135 d 8015D: Diese Units: %Ree	%RPD	RPDLimit	Qual
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP Sample ID MB-39932 Client ID: PBW Prep Date: 8/22/2018 Analyte	Analysis Date: 4 Result PQL ND 0.40 ND 2.5 0.44 SampType: <b>N</b> Batch ID: <b>3</b> Analysis Date: 4 Result PQL	3/17/2018 SPK value 0 0.5000 IBLK 9932 3/25/2018 SPK value	Se SPK Ref Val Testo Ru Se SPK Ref Val	eqNo: 1764726 %REC LowLimi 88.5 76.6 20de: EPA Metho unNo: 53705 eqNo: 1771536 %REC LowLimi	Units: mg/L t HighLimit 3 135 d 8015D: Diese Units: %Ree t HighLimit	%RPD	RPDLimit	Qual
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP Sample ID MB-39932 Client ID: PBW Prep Date: 8/22/2018 Analyte Surr: DNOP	Analysis Date: 4 Result PQL ND 0.40 ND 2.5 0.44 SampType: N Batch ID: 3 Analysis Date: 4 Result PQL 0.82	3/17/2018 SPK value 0 0 0.5000 IBLK 9932 3/25/2018 SPK value 0.5000	Se SPK Ref Val Testo Ru Se SPK Ref Val	eqNo: 1764726 %REC LowLimi 88.5 76.6 Code: EPA Metho unNo: 53705 eqNo: 1771536 %REC LowLimi 163 76.6	Units: <b>mg/L</b> t HighLimit 3 135 d 8015D: Diese Units: %Ree t HighLimit 3 135	%RPD	RPDLimit	Qual Qual S
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP Sample ID MB-39932 Client ID: PBW Prep Date: 8/22/2018 Analyte Surr: DNOP Sample ID LCS-39932	Analysis Date: 4 Result PQL ND 0.4( ND 2.5 0.44 SampType: N Batch ID: 3 Analysis Date: 4 Result PQL 0.82 SampType: L	3/17/2018 SPK value 0 0.5000 1BLK 9932 3/25/2018 SPK value 0.5000 CS	SPK Ref Val Test0 SPK Ref Val SPK Ref Val	eqNo: 1764726 %REC LowLimi 88.5 76.6 Code: EPA Metho unNo: 53705 eqNo: 1771536 %REC LowLimi 163 76.6 Code: EPA Metho	Units: mg/L t HighLimit 3 135 d 8015D: Diese Units: %Ree t HighLimit 3 135 d 8015D: Diese	%RPD el Range %RPD	RPDLimit	Qual Qual S
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP Sample ID MB-39932 Client ID: PBW Prep Date: 8/22/2018 Analyte Surr: DNOP Sample ID LCS-39932 Client ID: LCSW	Analysis Date: 4 Result PQL ND 0.40 ND 2.5 0.44 SampType: M Batch ID: 3 Analysis Date: 4 Result PQL 0.82 SampType: L Batch ID: 3	8/17/2018 SPK value 0.5000 1BLK 9932 8/25/2018 SPK value 0.5000 CS 9932	Sek SPK Ref Val Test0 SPK Ref Val Test0 Ru	eqNo: 1764726 %REC LowLimi 88.5 76.6 Code: EPA Metho unNo: 53705 eqNo: 1771536 %REC LowLimi 163 76.6 Code: EPA Metho unNo: 53705	Units: mg/L t HighLimit 3 135 d 8015D: Diese Units: %Rea t HighLimit 3 135 d 8015D: Diese	%RPD el Range %RPD el Range	RPDLimit	Qual Qual S
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP Sample ID MB-39932 Client ID: PBW Prep Date: 8/22/2018 Analyte Surr: DNOP Sample ID LCS-39932 Client ID: LCSW Prep Date: 8/22/2018	Analysis Date: 4 Result PQL ND 0.4( ND 2.5 0.44 SampType: M Batch ID: 3 Analysis Date: 4 Result PQL 0.82 SampType: L Batch ID: 3 Analysis Date: 4	3/17/2018 SPK value 0 0.5000 IBLK 9932 8/25/2018 SPK value 0.5000 CS 9932 8/25/2018	Se SPK Ref Val Test0 Ru SPK Ref Val Test0 Ru Se	eqNo: 1764726 %REC LowLimi 88.5 76.6 Code: EPA Metho unNo: 53705 eqNo: 1771536 %REC LowLimi 163 76.6 Code: EPA Metho unNo: 53705 eqNo: 1771538	Units: mg/L t HighLimit 3 135 d 8015D: Diese Units: %Ree t HighLimit 3 135 d 8015D: Diese Units: %Ree	%RPD el Range %RPD el Range	RPDLimit	Qual Qual 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
- PQL Practical Quanitative Limit
- 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

Page 12 of 17

WO#:	1808812

Client: Project:	Andeav River T	or Bloomfield								
1 lojeet.	Idver 1									
Sample ID	LCS-39932	SampType:	LCS	Test	Code: EP	A Method	8015D: Diese	el Range		
Client ID:	LCSW	Batch ID:	39932	R	unNo: <b>53</b>	5705				
Prep Date:	8/22/2018	Analysis Date:	8/25/2018	S	eqNo: 17	71538	Units: %Red	•		
Analyte		Result PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		0.35	0.2500		138	76.6	135			S
Sample ID	LCSD-39932	SampType:	LCSD	Test	Code: EP	A Method	8015D: Diese	el Range		
Client ID:	LCSS02	Batch ID:	39932	R	unNo: <b>53</b>	5705				
Prep Date:	8/22/2018	Analysis Date:	8/25/2018	S	eqNo: 17	71545	Units: %Red	•		
Analyte		Result PQI	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		0.35	0.2500		141	76.6	135	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
- PQL Practical Quanitative Limit
- 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

Page 13 of 17

Andeavor Bloomfield

WO#: **1808812** 

11-Sep-18

Project: River Te	rrace 8 13	18											
Sample ID 100ng lcs2	SampT	ype: LC	S4	Tes	tCode: El	PA Method	8260: Volatile	es Short L	.ist				
Client ID: BatchQC	Batch	n ID: <b>D5</b>	3589	F	RunNo: 5	3589							
Prep Date:	Analysis D	ate: 8/	21/2018	5	SeqNo: 1	767893	Units: µg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	19	1.0	20.00	0	95.6	80	120						
Toluene	21	1.0	20.00	0	103	80	120						
Ethylbenzene	20	1.0	20.00	0	102	80	120						
Methyl tert-butyl ether (MTBE)	19	1.0	20.00	0	93.0	80	120						
Xylenes, Total	60	1.5	60.00	0	100	80	120						
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130						
Surr: Toluene-d8	9.2		10.00		91.9	70	130						
Sample ID 1808812-002ams	SampT	ype: <b>M</b>	64	Tes	tCode: El	PA Method	8260: Volatile	es Short L	.ist				
Client ID: TP-8	Batch	n ID: <b>D5</b>	3589	F	RunNo: 5	3589							
Prep Date:	Analysis D	ate: 8/	21/2018	S	SeqNo: 1	767896	Units: µg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	100	5.0	100.0	0	103	80	120						
Toluene	110	5.0	100.0	0	108	80	120						
Ethylbenzene	110	5.0	100.0	2.802	108	80	120						
Methyl tert-butyl ether (MTBE)	110	5.0	100.0	0	109	43.6	145						
Xylenes, Total	320 7.5		300.0	0	0 108 80		120						
Surr: 4-Bromofluorobenzene	48		50.00		96.5 70		130						
Surr: Toluene-d8	50		50.00		100	70	130						
Sample ID 1808812-002ams	d SampT	ype: <b>M</b>	SD4	Tes	tCode: El	PA Method	8260: Volatile	es Short L	.ist				
Client ID: TP-8	Batch	n ID: <b>D5</b>	3589	F	RunNo: 5	3589							
Prep Date:	Analysis D	ate: 8/	21/2018	S	SeqNo: 1	767897	Units: µg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	98	5.0	100.0	0	97.5	80	120	5.28	20				
Toluene	110	5.0	100.0	0	106	80	120	1.74	20				
Ethylbenzene	110	5.0	100.0	2.802	106	80	120	2.30	20				
Methyl tert-butyl ether (MTBE)	110	5.0	100.0	0	108	43.6	145	1.19	20				
Xylenes, Total	310	7.5	300.0	0	104	80	120	3.41	20				
Surr: 4-Bromofluorobenzene	50		50.00		100	70	130	0	0				
Surr: Toluene-d8	48		50.00		95.3	70	130	0	0				
Sample ID rb2	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260: Volatile	es Short L	.ist				
Client ID: PBW	Batch	n ID: <b>D5</b>	3589	F	RunNo: 5	3589							
Prep Date:	Analysis D	ate: 8/	21/2018	S	SeqNo: 1	767912	Units: µg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	ND	1.0											

#### **Qualifiers:**

**Client:** 

\* 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

PQL Practical Quanitative Limit

- 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

Page 14 of 17

WO#: 1808812

Client: And Project: Riv	deavor Bloomfie er Terrace 8 13	ld 18											
Sample ID rb2	SampT	ype: ME	BLK	TestCode: EPA Method 8260: Volatiles Short List									
Client ID: PBW	Batch	ID: <b>D5</b>	3589	RunNo: 53589									
Prep Date:	Analysis D	ate: <b>8/</b>	21/2018	S	eqNo: 1	767912	Units: µg/L						
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: 4-Bromofluorobenzene	e 12		10.00		117	70	130						
Surr: Toluene-d8	9.9		10.00		98.9	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
- PQL Practical Quanitative Limit
- 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

Page 15 of 17

WO#:	1808	8812
		-

Client: Project:	Andea River	vor Bloomfield Terrace 8 13 18			
Sample ID Client ID:	MB-39852 PBW	SampType: MBLK Batch ID: 39852	TestCode: EPA 6010B: RunNo: 53642	Total Recoverable Metals	
Prep Date:	8/16/2018	Analysis Date: 8/22/2018	SeqNo: 1768995	Units: <b>mg/L</b>	
Analyte		Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit	Qual
Lead		ND 0.0050			
Sample ID	LCS-39852	SampType: LCS	TestCode: EPA 6010B:	Total Recoverable Metals	
Client ID:	LCSW	Batch ID: 39852	RunNo: 53642		
Prep Date:	8/16/2018	Analysis Date: 8/22/2018	SeqNo: 1768997	Units: <b>mg/L</b>	
Analyte		Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit	Qual
Lead		0.49 0.0050 0.5000	0 98.5 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
- PQL Practical Quanitative Limit
- 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

Page 16 of 17

11-Sep-18

Client:	Andeavor	Bloomfie	eld												
Project:	River Ter	race 8 13	18												
Sample ID	1808812-001ams	SampT	уре: М	S	Tes	TestCode: EPA Method 8015D: Gasoline Range									
Client ID:	MW-49	Batch	n ID: <b>B</b>	53589	F	RunNo: 5	3589								
Prep Date:		Analysis D	ate: 8	/21/2018	S	SeqNo: 1	767740	Units: mg/L							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Gasoline Rang	e Organics (GRO)	0.49	0.050	0.5000	0.01900	93.8	63.4	130							
Surr: BFB		9.6		10.00		96.0	70	130							
Sample ID	1808812-001amsd	SampT	уре: М	SD	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e					
Client ID:	MW-49	Batch	n ID: <b>B</b>	53589	RunNo: <b>53589</b>										
Prep Date:		Analysis Date: 8		/21/2018	S	eqNo: 1767741		Units: mg/L							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Gasoline Rang	e Organics (GRO)	0.48	0.050	0.5000	0.01900	91.7	63.4	130	2.20	20					
Surr: BFB		10		10.00		99.6	70	130	0	0					
Sample ID	2.5ug gro lcs2	SampT	ype: L	cs	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e					
Client ID:	LCSW	Batch	n ID: <b>B</b>	53589	F	3589									
Prep Date:		Analysis D	ate: 8	/21/2018	S	SeqNo: 1	767762	Units: mg/L							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Gasoline Rang	e Organics (GRO)	0.50	0.050	0.5000	0	99.8	70	130							
Surr: BFB		9.9		10.00		99.3	70	130							
Sample ID	rb2	SampT	уре: М	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e					
Client ID:	PBW	Batch	n ID: <b>B</b>	53589	F	RunNo: 5	3589								
Prep Date:		Analysis D	ate: 8	/21/2018	S	SeqNo: 1	767763	Units: mg/L							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Gasoline Rang	e Organics (GRO)	ND	0.050												
Surr: BFB		10		10.00		104	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
- PQL Practical Quanitative Limit
- 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

Page 17 of 17

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environm TEL: 505-345- Website: ww	ental Analysis Labora 4901 Hawkin: Albuquerque, NM 87 -3975 FAX: 505-345-4 rw.hallenvironmental.	utory s NE 7109 <b>Sam</b> 4107 .com	ple Log-In Cł	neck List
Client Name: ANDEAVOR BLOOMFIEL	Work Order Nur	mber: 1808812		RcptNo:	1
Received By: Anne Thorne Completed By: Anne Thorne Reviewed By: <u>50</u>	8/14/2018 7:00:00 8/14/2018 11:33:3 S(1¢(C&	) AM 39 AM	Anne Hum Anne Hum		
Chain of Custody 1. Is Chain of Custody complete? 2. How was the sample delivered?	ENMS/16,	Yes ✔ <u>Courier</u>	No 🗌	Not Present	
Log In 3. Was an attempt made to cool the samples?		Yes 🔽	No 🗌	NA 🗌	
<ul><li>4. Were all samples received at a temperature of</li><li>5. Sample(s) in proper container(s)?</li></ul>	>0° C to 6.0°C	Yes ⊻ Yes ⊻	No 🗌	NA 🗌	
<ul><li>6. Sufficient sample volume for indicated test(s)?</li><li>7. Are samples (except VOA and ONG) properly</li></ul>	preserved?	Yes ✔ Yes ✔	No 🗌 No 🗔		
<ul><li>8. Was preservative added to bottles?</li><li>9. VOA vials have zero headspace?</li></ul>		Yes	No 🗹	NA 🗌 No VOA Vials 🗹	
10. Were any sample containers received broken?	,	Yes	No 🗹	# of preserved bottles checked	·····
<ul> <li>11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)</li> <li>12. Are matrices correctly identified on Chain of Customer and</li></ul>	istody?	Yes 🗹		for pH: Adjusted?	12 unless noted)
<ul> <li>13. Is it clear what analyses were requested?</li> <li>14. Were all holding times able to be met? (If no, notify customer for authorization.)</li> </ul>		Yes ✔ Yes ✔	No 🗌 No 🗍	Checked by: E	NM 8/16/18
Special Handling (if applicable) 15. Was client notified of all discrepancies with thi	s order?	Yes 🗌	No 🗌	NA 🗹	
Person Notified: By Whom: Regarding: Client Instructions:	Data	e   eMail P		In Person	
16. Additional remarks: CUSTODY SEALS INTACT ON ALL SA 17. <u>Cooler Information</u> Cooler No. Temp °C   Condition   Sea	MPLE BOTTLES/a	at 8/14/18	Signed By	· · · · · · · ·	
11.6GoodYes21.6GoodYes					

<b>م</b>		TAL	ORY					-			(N	or	Y) səlddu8	λiΑ														nalytes.	-** 
Ю 1	; 		<b>RAT</b>		109													1		 			1					d 800	2 ) ]
71		Ž	õ	Ĕ	M 87	410	j	<b> </b>			('	¥0.	V-ime2) 07	.78	┥		+	+-			┼─			+	+	┿	+	Tar Meth	
		0	ξ	tal.co	Je, N	-345	nest		λĮ	10	38.	LW,	218 BTEX,	08 >	<		+	╀╌	+	<u>.</u>	+			┼	-	╉	+-	and A M	1
	i		S	nem	uerqu	505	Req	S,8	ЬСЕ	28	08/	Sə	bioitee9 18	08	Ť							1-					╋	–¦& ⊡ ≥	•
		Ż	S	lvířor	Ibndl	Fax	lysis	(*(	05'*0	)d'²	ON	' <sup>©</sup> 01	ions (F,CI,N	uA		. <u></u>	· .											ed b	
				aller	∢ '	ល	Ana					57V		<u>)</u> 71	_		×	↓_										cal N alyz	
		╏	Z	ww.F	S NE	5-397		<u> </u>	(5)	115	1.140	28 J	0019M) dv		$\downarrow$		<u> </u>		4			-		_		-	$\downarrow$	alyti it an	
	1		<	5	awkin	5-345				(	1.8	191			+				-+				-	1			_	An	
		] [			т Б	1. 50		(OS	IW/O	ิย	1/02	19)	89108 Ha			×	┼──		╉				+	┼	-	+-		See	·
		┦			49(	Te		յչ)	lo se	e)	Hd.	L+3	I8TM+X31	в					+	<del>,</del> ,	<u> </u>			+	┦─	┼╌		sta: s T s	
— г		_; L					·	(	1208	;)s,{	IME	L+3	IEX+MTB	.B	Ť			<u> </u>	╡			+	-	+	┢	+	+	) Seme	
			race	8			aine.				No	26-1.4±1.6	Z. CEUL -> HEAL North	102-		R.	102											Date Time F	Date Time
i	d lime:	d 🗆 Rush	ne: River Ter	8 - 13- 1	nnual Event	3266	ader Allon L			Tracy Payn	KYes 1	perature.2./	Preservative Type	HCI		Neat	HNO3											Wolf.	J.
4 <del>-</del>		X Standar	Project Nam	Date:	Project #: A	PO# 1262	Project Man			Sampler:	On Ice:	Sample Tem	Container Type and #	40ml VOA-5	250 ml	amber-1	250 ml plastic-1			-								Received by: Churt	Received by:
istody Record		loomtield Terminal	i	14990	field, NM 87413	4-1483	Hains@Andeavor.com		X Level 4 (Full Validation)				Sample Request ID	MW-49														<u>≽</u> V L-	multicele.
-of-Cu				55. 50 CR	Bloom	915-53	Allen.S.				EXCEL		Matrix	H <sub>2</sub> 0			-								·		     	Kelinquished	
hair	- Park			Addre			Fax#:	ackage	ard		Type)		Time	0180		+										Ţ			<u>8</u> 2
Ū	Cliant:			Mailing /		Phone #	email or	QA/QC P	□ Stand		X EDD (	ŀ	Date	8//1/8														Xia/6	13 Is 1

Stody Record     Turn-Around Time:       ownfield Terminal     X Standard     Rush       Nomfield Terminal     X Standard     Rush       Abalt Validation     Project Name: River Terrace     Nom All SIS LaBONMENT       Project Name: River Terrace     Project Name: River Terrace       Project Name: River Terrace     Batter Strandard       Project Nameger: Allen Hains     Project Manager: Allen Hains       Project Manager: Tracy Payne     Sample: Tracy Payne       Sample: Tracy Payne     Rick (GROD RYOMRO)       Sample Request ID     Project Manager: Allen Hains       Project Manager: Tracy Payne     Rick (GROD RYOMRO)       Sample Request ID     Type and #       Type and #     Type       TP-8     Aominvol.5       A dominvol.5     X       Progect Namager: Allen Hains     Standard Art 8: 1)       Sample Request ID     Type and #       Type and #     Type       TP-8     Aominvol.5       A dominvol.5     X       Progect Namager: Allen Hains     Standard Art 8: 1)       Diate:     Type       Sample Request ID     <	A ISTU Relinquished
Turn-Around Time:     Turn-Around Time:       Froiset Name:     River       Project Name:     River       Project Name:     River       Project Name:     River       Project Name:     River       Project Name:     River       Project Name:     River       Project Name:     River       Project Name:     River       Project Name:     River       Project Name:     River       Project Name:     River       Project #     Annual Event       Project #     Annual Event       Project Manager:     All RS10       BTEX+MTBE+TPH(Gas only)     Project #       Project Manager:     Annual Event       Project Manager:     All RS10       Right Reservative     HEAL No.       Project Manager:     All RS10       Right Remortature:     2 ccnt)       Right Restrict No.     8081 Pecatiodes / 8082 PCB/s       Right Restrict No.     8081 Pecatiodes / 8082 PCB/s       Right Restrict     8081 Pecatiodes / 8082 PCB/s    <	by Walter
Imiliania       Imiliania	Received by: Received by:
Hall Environmental con       Hall Environmental con         Analysis       Request         Analys	La la
Hall       Analysis       Ana	Date Time \$\s/s/1550 Date Time C 3/14/18 C 3/14/18
Hall       Hall	Rema VOC
Hall Environmental         Albuquerque, NM 87109           Abala Si Si Si Si Si Si Si Si Si Si Si Si Si	rks: S s Tar
ALL ENVIRON 504 (1, 40 do 50 f 10 do 10 d	ee Ar get Li
Environmental com       X       TOTAL METALS - LEAD ONL'         Since (F, Cl, NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )       X       Since (F, Cl, NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )         Albuquerque, NM 87100       Albuquerque, NM 87100       X         Albuquerque, NM 87100       X       Since (F, Cl, NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )         Albuquerque, NM 87100       X       X       X         Albuquerque, NM 87100       X       X       X         Albuquerque, NM 87100       X       X       X       X       X         Albuquerque, NM 87100       X       X       X       X       X       X         Albuquerque       X       X       X       X       X       X       X       X         Albuquerque       X       X       X       X       X       X       X       X       X         Albuquerque       X       X       X       X       X       X       X       X         Albuquerque       X       X       X       X	alytic st an
Nibit       State       State <th< th=""><td> al Me alyze</td></th<>	 al Me alyze
AB021B BTEX,MTBE only         AB0RAT           N         8270 (Semi-VOA)           N         8270 (Semi-VOA)	thod by I
А	EPA
	d Tar Meth
	get A od 8(
	naly )21B
Air Bubbles (Y or N)	es.

į		(					r							ÞĮ	n	٦ ۲	5	1	
Chế	o-uit	t-Cu	stody Record	Turn-Around	Time:									Č	ž		ļ		
Client: Ar	ndeavo	or - Blo	oomfield Terminal	X Standard	🗆 Rush					Ż	, 1 , 1			5 Å			Ż	. >	
		Î		Project Name	e: River Te	rrace				MMM	hallen	viron	nenta					Ľ	
Mailing Add	dress: {	50 CR	4990	Date:	<u>8-13</u> -	18		4901	Hawk	ns N	× ،	nonq	eraue	NN	87109				
	â	loomfi	ield, NM 87413	Project #: Ar	nual Ever	It	-	Tel.	505-34	15-39	75	Fax	505-3	45-4	107				
Phone #:	6	15-534	1-1483	PO# 12623	3266						Ana	lysis	Requ	est					
email or Fa	X#: Al	llen.S.I	Hains@Andeavor.com	Project Mana	Ider: Allen I	lains		()	(-			(†	s						
QA/QC Pack	(age:						(12	<u>ุลเพ</u>				'OS' <sup>1</sup>	CB.	<u>،</u>					
□ Standar	q	- 1	X Level 4 (Full Validation)				08)	SE			SM JAE	<sup>⋫</sup> Od	- 2	iuc					
□ Other _			-	Sampler:	Tracy Pay	/ne	s'8		(1.	(۲.	- רו ואו	' <sup>z</sup> 0	808					(N	
X EDD (Ty	(be) E	SCEL		On Ice:	X Yes	D No	MT		811	<del>7</del> 04	57 278	N' <sup>ε</sup> (	/ s		(\.			011	
				Sample Tem	perature: 2	6-45-10=1.6	+3	9) +7(	6 pc	g po	3 no IAT	ON'	əbi		ר∧ר			(۲	<del>.</del>
						2 coch-s	atn atr	831	ethc	oqtə	ME.	(E'CI	oitee	⊐18	imə			səjo	
Date T	me N	Aatrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	I+X3T8	08 Hd.	W) Hd.	M) 803	:8) НА <sup>(</sup> ЈАТО	snoin	PG 180		S) 0/2			ir Bubl	
0 8/9/G	345	H <sub>2</sub> O	TP-6	40ml VOA-5	HCI		3		L	3	L  -	1	8		2		+	√	
			-	250 ml	Naat			<b>×</b>		+	+	Ŀ	+	+			+		
	_			amber-1	INEAL	692		<				_							
				250 ml plastic-1	HNO <sup>3</sup>	203					×								
																			<u> </u>
																	+	-	
	+							_					-					+-	
								+							_		-	_	<u> </u>
	+-	1									+		+					_	
									_	-	+	Ţ		+ .			+	<u>-</u>	
																		┝╼╌┟╴	
Date: Time	יי קרו	lincuis ber		Received hv <sup>.</sup>		Date Time	(	-							_,		- :	_	
3/13/18  15	د <b>ر</b> ار	$\mathbf{X}$		Cher.	h-t-d	8/13/18 1556		Irks: 's Ta	See / Irget	Anaıy List a	ticai naly	Metr zed I	ods y EF	and A N	l arg	et Ar d 80;	alyt 21B.	es.	
Date: Tim 8/3115 12		Manisher	ANULANA LEU	Received by:		Legale 41 Fine													

-Custody Record Tum-Around Time:		Project Name: River Terrace www.hallenvironmental.com	0 CR 4990 Date: 8 - 13 - 16 4901 Hawkins NE - Albuquerque, NM 87109	oomfield, NM 87413 Project #: Annual Event Tel. 505-345-3975 Fax 505-345-4107	5-534-1483 PO# 12623266 Analysis Request	en.S.Hains@Andeavor.com Project Manager: Allen Hains		Sampler         Iracy Fayne         B         H         N         A         N         B         A         N         B         A         N         A         N         B         A         N         A         N         A         N         B         A         N         N         A         N         A         N         A         N         A         N         A         N         A         A         N         A         A         N         A         A         N         A	atrix Sample Request ID Container Preservative HEAL No. Container Preservative HEAL No. Container Type BETE PPH (Meethor Sample Request ID Type and # Type HEAL No. Container Preservative Preservative Pr	1 <sub>2</sub> O Collection Gallery 40ml VOA-5 HCI Area Coff X X X	250 ml Neat ZUS X	250 ml HNO <sub>3</sub> ZC X X	20 TRIP BLANK 40 MLVON-3 HCI ZUG			nuisbed by: Received by: Date Time Remarks: See Analytical Methods and Target Analytes.	
Chain-of-Custoo	nt: Andeavor - Bloomf		ing Address: 50 CR 4990	Bloomfield,	ne #: 915-534-148	iil or Fax#: Allen.S.Hains 2C Package:	standard X Lev	DD (Type) EXCEL	te Time Matrix Sar	Ve IIO H20 Co			 10 - H20 TRI			Time: Relinquished by	Time: Dalinguished hyr

			www.hallenvironmental.com	1901 Hawkins NE - Albuquerque NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	с () () ()	۱۸ ۱۹ ۱۹ ۱۹ ۱۹ ۱۹ ۱۹ ۱۹ ۱۹ ۱۹		N) 3E 808 505 <sup>2</sup> - T - T - T - T - T - T - T - T - T - T	118 504 504 504 128 118 118 118 118 118 118 118 118 118	(G od 4 od 5 ); (G od 4 (N ); (Y) (Y)	TPH 80158 TPH (Method TPH (Method TOTAL ME Mainons (F,C Mainons (F,C) Mainons (F,C Mainons (F,C) Mainons			×					rks: See Analytical Methods and Target Analytes.	s larget List analyzed by EPA Method 8021B.	
ſ					1			(120)	)8); 98);	s'8ľ	L MT ■T	+31 +31	atm+xate								Remai	$\frac{5}{2}$	
			race	B	lt		lains			ne	No	-05-10-16	HEAL No.		802 -	802					Date Time	7/13/18 1551	rs/13/18 lime
-	Time:	□ Rush	: River Ter	8 - 13 - 1	nual Even	266	ger: Allen H			Tracy Pay	<u></u> щ'Yes	erature.2.4	Preservative Type	HCI	Neat	HNO <sup>3</sup>							
	Turn-Around	X Standard	Project Name	Date:	Project #: An	PO# 12623	Project Mana			Sampler:	On Ice:	Sample Temp	Container Type and #	40ml VOA-5	250 ml amber-1	250 ml plastic-1					Received by:	1 chr	Received by
	stody Record	omfield Terminal		0661	∋ld, NM 87413	1483	ains@Andeavor.com		(Level 4 (Full Validation)				Sample Request ID	DW-3							by:		
	of-Cus	vor - Blo		50 CR 4	Bloomfie	915-534-	Allen.S.H	;	×		EXCEL		Matrix	H <sub>2</sub> O		<b>&gt;</b>					Relinquished I		Relinquished I
	hain⊣	Andea		Address:		#:	r Fax#:	Package:	ldard	¥	(Type)		Time	0721							Time:	1556	Time:
(	ပ	Client:		Mailing		Phone:	email o	QA/QC	□ Stan	□ Othe	X EDD		Date	B/2/8							A ie		Odate:

	andard 🗆 Rush	t Name: River Terrace www.	8 - 13 - 18 4901 Hawkins NI	t#: Annual Event Tel. 505-345-39	12623266	t Manager. Allen Hains	(12 (100 700	(08) 205	er. Tracy Payne		e Temperature $Q$ $b$ $c$ $f$ $b$ $c$ $f$ $b$ $c$ $f$ $b$ $d$ $b$ $d$ $d$	ainer Preservative HEAL No. X+MTB (Methoday) (Methoday)	VOA-5 HCI -2 09 X	er-1 Neat	tic-1 HNO <sub>3</sub>				d hvr Date Time Domotion Soc Anoly	$\sqrt{13/l_8}$ /3/l/8 /5516 VOC's Target List	d by: Date Time
nain-oi-custoay kecora	Andeavor - Bloomfield Terminal X (	Proj	Address: 50 CR 4990 Date	Bloomfield, NM 87413 Proj	#: 915-534-1483 PO	Fax#: Allen.S.Hains@Andeavor.com Proj	Package:	dard X Level 4 (Full Validation)	Sam	(Type) EXCEL On I	Sam	Time Matrix Sample Request ID Co	1335 H <sub>2</sub> 0 DW-2 40r	2 ar					Time: Relining ished but		Time: Relinquished by: • 6600

		-				F							2	P	2	
Chair	1-01-01	istody kecord	Turn-Around	Time:				Ì					NN	Z	Ē	
ent: Ande	avor - B	loomfield Terminal	X Standard	🗆 Rush					Į	S S	s S		No.	N N		, <del>)</del>
		-	Project Name	River Ter	race			5	ww.ha	lenvir	onmer	ntal.o	L LO	 	,   	
iling Addres	ss: 50 CF	۲ 4990	Date:	1-51-8	Ø		4901 F	lawkins	Ц Х	· Albu	auera	ne. N	IM 87	60		
	Bloom	ifield, NM 87413	Project #: An	inual Even			Tel. 51	<b>05-345</b>	-3975	μ̈́	ax 50:	5-345	5-4107	1		
one #:	915-53	4-1483	PO# 12623	1266					4	nalys	is Red	lsənb	L.			
ail or Fax#:	Allen.S	.Hains@Andeavor.com	Project Mana	ger: Allen H	lains		(O)			NIL Y	S, (⊅	-				
/QC Package Standard		X Level 4 (Full Validation)				(1208			(SV	O QA	5 bCB	λįu				
Other			Samular	Tracy Day	ou.	)s,{	ספ	()		רב	א <sub>יג</sub> ע 1,20	<u>•</u> 3				(
EDD (Type)	EXCEL		On Ice:	L Yes	No No		/02			- S	אר 8 / \$ יאר <sup>\$</sup>	ВT	(A			N
			Sample Temp	oerature 2.6	-LE-1.d-1.b	+3 +3	(פו	9 P	<u>o n</u> o		ои, eəbi	M,X	ΟΛ·			, Y)
ate Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	2 Calts HEAL No. 180881 2	atex+MTB	TPH 8015B	odieM) H9T	0158) HAG		io,r) snonm bites91 Pestic	3T8 81208	-imə2) 0728			Selddug rid
- 9\/s	H <sub>2</sub> O	DUP#4	40ml VOA-5	HCI	214		×					×				
			250 ml amber-1	Neat	90		×									
			250 ml plastic-1	HNO <sub>3</sub>	elp					×						
1 3/	Hr O	TRIP BLANK	TO FL VON	HCL	- p							[X]				-
									_							-
E Time:	Relinquishe	ed by:	Received by:	1 Kr	Date Time	Rema VOC	rks: S S Tar	ee Ar	alytic st an	al Ma	ethod d hv l	ls ar FPA	Meth	rget /	Naly 15	tes.
: Time:	A Blinguishe	ator. Attachalate	Received by:	2	Date Time	   					- } }			5	1 - 1 2	: