# GW – 001

# GW REMEDIATION & MONITORING REPORT

# 2013

Western Refining™

# Bloomfield Refinery
# 2013 Groundwater Remediation and Monitoring Annual Report

**January – December 2013**

**Submitted April 2014**

Western Refining

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April 14, 2013

John E. Kieling, Bureau Chief
New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, NM 87505

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

**FedEx Tracking #: 7985 4171 2461 (delivery to NMED)**
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RE: 2012 Groundwater Remediation and Monitoring Annual Report
Western Refining Southwest, Inc. – Bloomfield Refinery
EPA ID #NMD089416416
GW – 001

Dear John E. Kieling and Mr. Chavez,

Western Refining Southwest Inc. – Bloomfield Refinery submits the above referenced Annual Report pursuant to Section IV.A.2 of the July 2007 HWB Order, and in compliance with Section 22 of the facility's July 2010 Discharge Permit. This report summarizes the groundwater monitoring, remediation, and inspection activities conducted at the Bloomfield Terminal in 2013.

If you have any questions or would like to discuss any aspect of this report, please contact me at 505-632-4171 or Randy.Schmaltz@wnr.com.

Sincerely,

James R. Schmaltz
Health, Safety, Environmental & Regulatory Director
Western Refining Southwest, Inc. – Bloomfield Refinery

Cc: Brandon Powell, NMOCD
Allen Hains, Western Refining - El Paso

# 2013 Groundwater Remediation and Monitoring Annual Report

## January – December 2013


## Bloomfield Refinery

### Western Refining Southwest, Inc.

### #50 Rd 4990

### Bloomfield, New Mexico 87413

## Submitted: April 2014

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

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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 Environment Department Oil Conservation Division (NMOCD)
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 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 Refinery in 2013 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 22 of Discharge Permit GW-001 (NMOCD, 2010) issued to the Bloomfield Refinery by the New Mexico Energy, Mineral, and Natural Resources Department Oil Conservation Division (NMOCD). This report includes a summary of sampling activities, total fluids recovery, below-grade testing, and remediation monitoring activities conducted in 2013.

## Groundwater Measurements

Depth-to-groundwater and depth-to-product measurements were collected from the refinery 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 2013 and August 2013, respectively. 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 field measurements were collected 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 the northwest general direction, with groundwater under the process areas flowing towards the north boundary barrier wall and Hammond Ditch collection system.

## Groundwater Monitoring

Groundwater monitoring activities conducted in 2013 included the collection of groundwater samples and field data from the following four areas of the Bloomfield Refinery.

- Refinery Complex – includes Refinery, 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 monitoring activities conducted in April 2013 followed the guidelines outlined in the approved Facility-Wide Groundwater Monitoring Plan dated June 2011. Monitoring activities conducted in August 2013 followed the guidelines outlined in the approved Facility-Wide Groundwater Monitoring Plan dated June 2012.

Groundwater concentrations above respective screening levels are primarily localized near the refinery process units. 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 Seep 1 through Seep 9 and along the San Juan River Bluff, which includes the East Fork area, were conducted in 2013. Visual inspection results and samples collected along the San Juan River as part of the groundwater monitoring program for the Bloomfield Refinery indicate that there has been no impact to the San Juan River.

### Total Fluids Recovery Systems

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

- Groundwater Recovery System using recovery wells within the Refinery 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 Waste Water Treatment Plant for treatment prior to disposal through the on-site injection well. Water from the River Terrace is treated separately and is re-used as Plant Water for facility operations.

For wells located along the river-side of the slurry wall in areas in which groundwater is limited and therefore not suited for pumping, absorbent socks are placed in each individual well where SPH is detected for product recovery. The socks are replaced periodically, and the used socks are managed as Special Waste.

### SPH Source Determination

In an effort to identify the source of the SPH at the Bloomfield facility, Western is collecting product samples from selected monitoring wells for distillation analysis. The intent of the samples is to potentially determine the type of hydrocarbons most prevalent at the various locations (i.e. diesel versus gasoline range organics), and determine if the product types are similar or different when comparing the different locations from which the samples were collected. The results of the distillation analysis at these sample locations will help determine if this approach provides useful information in identifying a potential source of the product.

### Below-Grade Testing and Tank Inspections

In compliance with the Refinery's Discharge Permit dated July 2010, underground process piping and sumps were inspected to determine their integrity for service. All piping and sumps tested in 2013 passed inspections and were returned to normal service following completion of

testing activities. In addition, petroleum storage tanks continue to be inspected at a frequency that is in compliance with API 650 and 653 guidelines.

# SECTION 1.0
# INTRODUCTION

## 1.1 Site Location and Description

Owner: San Juan Refining Company, a New Mexico Corporation
1250 Washington Street
Tempe, Arizona 85281

Operator: Western Refining Southwest, Inc.
(Formerly Giant Industries Arizona, Inc.), an Arizona Corporation
1250 Washington Street
Tempe, Arizona 85281

Facility: Bloomfield Refinery (physical address)
# 50 Road 4990
Bloomfield, New Mexico 87413

Western Refining Southwest, Inc. (postal address)
P.O. Box 159
Bloomfield, New Mexico 87413

US EPA ID: NMD089416416

SIC Code: 2911

The Bloomfield 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 Bloomfield Refinery had an approximate refining capacity of 18,000 barrels per day. Various process units operated at the facility, including 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 facility is located on approximately 263 acres south of Bloomfield, New Mexico in San Juan County (Figure 1). The refinery complex is bisected by County Road 4990 (Sullivan Road), which runs east-west. The process units, tank farm, wastewater treatment system, raw water ponds, and fire training area are located north of the county road. The crude oil and product loading racks, LPG storage tanks and loading racks, maintenance buildings/90-day storage area, pipeline offices, transportation truck shop, and Class I injection well are located south of the country road (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).

Refinery offices are located on the western end of the facility, along with warehouse space, maintenance areas, and a storage yard containing used material (e.g., pipes, valves). Petroleum processing units, located in the northwest portion of the refinery, include the crude unit, fluidized cracking unit, catalytic polymerization unit, and hydrodesulphurization unit. The API Separator and the aeration lagoons are located in the north central section of the refinery.

In the central portion of the site, aboveground storage tanks (AST's) occupy a large percentage of the refinery property. Located on the south side of Sullivan Road are the terminal facilities used for loading product and off-loading crude, as well as gas storage and hazardous waste storage.

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.

## 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 has 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.

**1986**

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

**1987**

- 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.

**1988**

- 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.

**1989**

- 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.

**1990**

- 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.

**1991**

- 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.

**1992**

- 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.

**1993**

- 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.

**1994**

- 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.

**1995**

- 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.

**1998**

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

**1999**

- 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.

**2001**

- Initiated a program to inoculate the Aeration Lagoons with sludge-consuming micro-organisms.

**2002**

- 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.

**2003**

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

**2004**

- Monitoring well 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.

**2005**

- 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 #1 and #2 and thirteen bioventing wells were drilled and construction of the River Terrace Bioventing Project was initiated.

**2006**

- 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.

**2007**

- 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.

**2008**

- 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.

**2009**

- 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.

**2010**

- 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.

**2011**

- 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.

**2012**

- 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.

**2013**

- 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.

# SECTION 2.0
# SCOPE OF ACTIVITIES

This Annual Report includes a summary of activities conducted at the Bloomfield facility in 2013 pursuant to the reporting requirements outlined in Section IV.A.2. of the July 2007 Consent Order issued by the NMED-HWB, and Section 22 of Discharge Permit GW-001 issued to the Bloomfield Refinery by the NMOCD. This report includes a summary of sampling activities, total fluids recovery, below-grade testing, and remediation monitoring activities conducted in 2013.

## 2.1 Groundwater Monitoring Activities

Groundwater monitoring activities conducted in 2013 included the collection of groundwater samples and field data from the following four areas of the Bloomfield Refinery.

- Refinery Complex
- North Boundary Barrier
- San Juan River Bluff
- San Juan River Terrace

Groundwater monitoring activities conducted in April 2013 follow the guidelines outlined in the approved Facility-Wide Groundwater Monitoring Plan dated June 2011. Monitoring activities conducted in August 2013 follow the guidelines outlined in the approved Facility-Wide Groundwater Monitoring Plan dated June 2012. Any activities conducted contrary to the approved Monitoring Plans are noted in this report.

General groundwater sampling procedures followed during each sampling event are included in Appendix A. Detailed information regarding groundwater monitoring activities conducted in 2013 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 2013 and August 2013, 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 and procedures followed is provided in Section 3.1.2 and Appendix A, respectively.

In addition, field parameters were collected at the outfalls and seeps when sufficient water was present.

### *2.1.3 Refinery Complex Sampling*

Groundwater samples were collected from specified wells located within the Refinery Complex during the Semi-Annual Sampling Event and Annual Sampling Event conducted in April 2013 and August 2013, respectively, with the exception of wells that contained SPH, wells that were dry, or wells that did not contains enough water to collect a sample. Figure 10 and Figure 11 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 2013:

- Refinery Wells: MW-8, MW-30
- Cross-Gradient Wells: MW-1, MW-13, MW-33
- Downgradient Wells: MW-12, MW-35, MW-37, MW-38

Groundwater 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 – GRO by EPA Modified Method 8015B (MW-1, MW-12, MW-13, MW-37, and MW-38 only)
- TPH DRO by EPA Modified Method 8015B (MW-1, MW-13, MW-33, MW-12, MW-37, and MW-38 only)

Groundwater samples were not collected from MW-20 due to the presence of SPH. In addition, groundwater samples were not collected from MW-6 due to insufficient groundwater for sample collection.

Annual Sampling Event

Groundwater samples were collected from the following wells during the Annual Sampling Event conducted in August 2013:

- Refinery Wells: MW-4, MW-8, RW-15, MW-29, MW-30, MW-31, and MW-44
- Cross-Gradient Wells: MW-1, MW-13, MW-27, MW-32 and MW-33.
- Downgradient Wells: MW-11, MW-12, MW-33, MW-34, MW-35, MW-37, and MW-38

- RCRA Investigation Wells: MW-50, MW-51, MW-52, MW-53, MW-59, MW-62, MW-63, MW-64, MW-65, MW-67, and MW-68

Groundwater samples were not collected from RW-1, RW-9, RW-18, MW-20, MW-21, RW-23, MW-26, RW-28, MW-40, RW-42, RW-43, MW-54, MW-55, MW-56, MW-57, MW-58, MW-61, and MW-66 due to the presence of SPH. SPH appeared at RW-1, RW-18 and RW-23 during the bailing process and was not apparent prior to sampling. In addition, groundwater samples were not collected from MW-60 and MW-69 due to insufficient groundwater for sample collection.

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
- SVOCs by EPA Method 8270 (RCRA Wells, MW-11, MW-12, and MW-38 only)
- TPH-DRO by EPA Method 8015B
- TPH-GRO by EPA Method 8015B
- Total RCRA 8 Metals by EPA Method 6010B/7470)
- Total Dissolved Metals by EPA Method 6010B/7470
- Alkalinity by EPA Method 310.1
- Anions by EPA Method 300.0
- Carbon Dioxide by EPA Method 310.1

### *2.1.4 North Boundary Barrier Sampling*

Groundwater samples were collected from observation wells and specified collection wells in April 2013 and August 2013, with the exception of wells that contained SPH, wells that were dry, or wells that did not contain enough water to collect a sample. Figure 10 and Figure 11 shows the location of the North Boundary Barrier wells that were sampled in April 2013 and August 2013, 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 2013:

- Collection Wells: CW 0+60, and CW 25+95
- Observation Wells: OW 3+85, OW 16+60, OW 22+00, OW 23+10, OW 23+90, and OW 25+70

Groundwater samples were not collected from OW 1+50, and OW 11+15 due to the presence of SPH. In addition, groundwater samples were not collected from OW 0+60, OW 5+50, OW 6+70, OW 8+10, OW 14+10, and OW 19+50 due to insufficient groundwater for sample collection.

Groundwater samples collected in April 2013 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

Annual Sampling Event

Groundwater samples were collected from the following wells during the Annual Sampling Event conducted in August 2013:

- Collection Wells: CW 0+60, and CW 25+95
- Observation Wells: OW 16+60, OW 22+00, OW 23+10, OW 23+90, and OW 25+70

Groundwater samples were not collected from, and OW 3+85 and OW 11+15 due to the presence of SPH. In addition, groundwater samples were not collected from OW 0+60, OW 1+50, OW 5+50, OW 6+70, OW 8+10, OW 14+10, OW 19+50 and due to insufficient groundwater for sample collection.

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

### *2.1.5 San Juan River Bluff Sampling*

San Juan River Bluff sampling includes the collection of surface water samples at the outfall location 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 Semi-Annual Sampling Event conducted in April 2013:

- Outfalls: East Outfall 2, and East Outfall 3
- Seeps: Seep 1, Seep 3, Seep 6, and Seep 9

Surface water samples were not collected from Seep 2, Seep 4, Seep 5, Seep 7, and Seep 8 due to insufficient surface water for sample collection.

Surface water samples collected in April 2013 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)
- Total Dissolved Metals by EPA Method 6010B/7470 (Outfall locations only)

- Alkalinity by EPA Method 310.1
- Anions by EPA Method 300.0
- Carbon Dioxide by EPA Method 310.1

Annual Sampling Event

Surface water samples were collected from the following locations during the Annual Sampling Event conducted in August 2013:

- Outfalls: East Outfall 2, and East Outfall 3
- Seeps: Seep 1 and Seep 6

Surface water samples were not collected from Seep 2, Seep, 3, Seep 4, Seep 5, Seep 7, Seep 8, and Seep 9 due to insufficient surface water for sample collection.

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
- Total RCRA 8 Metals by EPA Method 6010B/7470 (Outfall locations only)
- Total Dissolved Metals by EPA Method 6010B/7470 (Outfall locations only)
- Alkalinity by EPA Method 310.1
- Anions by EPA Method 300.0
- Carbon Dioxide by EPA Method 310.1

### *2.1.6 San Juan River Terrace Sampling*

San Juan River Bluff sampling includes the collection of surface water samples at the four locations along the San Juan River, and includes the collection of groundwater samples at 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 2013. Therefore sampling activities associated with the Bioventing System are not included in this report.

Figure 3 shows the approximate 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 2013:

- 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
- Total RCRA 8 Metals by EPA Method 6010B/7470
- Total Dissolved Metals by EPA Method 6010B/7470
- Alkalinity by EPA Method 310.1
- Anions by EPA Method 300.0

### *2.1.7 Outfall and Seep Inspections*

Bi-monthly visual inspections of Seeps 1 through 9 and along the San Juan River Bluff, which includes the East Fork area, were conducted in 2013. Figure 3 shows the location of the outfalls and seeps in relation to the Bloomfield Refinery property. 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 Refinery operates a total fluid pumping system used to bring SPH and hydrocarbon impacted groundwater to the surface for treatment and disposal. This is accomplished by actively pumping wells within the groundwater impacted area. Recovered fluids are pumped to the Refinery's API separator for product recovery. The remaining recovered fluid is pumped through the wastewater treatment system prior to disposal. The groundwater recovery system was operational throughout 2013. The wells that operated as active recovery wells in 2013 are RW-1, RW-2, RW-3, RW-9, RW-14, RW-15, RW-16, RW-17, RW-18, MW-20, RW-22, RW-23, RW-28, RW-42, and RW-43 MW-55, MW-56, MW-57 and MW-58. Figure 2 shows the location of the recovery wells within the Bloomfield Refinery. 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 refinery-side of the barrier wall. For every collection wells there was installed an observation well along the river-side of the barrier wall. Bloomfield Refinery personnel continued to monitor fluid levels on both sides of the barrier wall in 2013 by collecting depth-to-water 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 refinery-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. Monitoring and remedial actions conducted in associated with this system are performed in compliance with the approved *Voluntary Measures Bioventing Monitoring Plan.* A summary of activities associated with the River Terrace Bioventing System are submitted separately to the agency 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, which is then pumped to the Refinery's Wastewater Treatment System 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 the Hammond Ditch, which is located just south of Tank 38. A summary of the operational data of the East Outfall Recovery System for 2013 is included in Section 3.3.4.

## 2.3 Below-Grade Testing and Tank Inspections

Pursuant to conditions of approval stated in Discharge Permit GW-001 (regulated by the NMOCD), below-grade sumps, sewer boxes, and underground piping are tested annually.

## 2.4 Waste Disposal

Western Refining indefinitely suspended refining operations at the Bloomfield Refinery 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.

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 collected during monitoring and testing performed in 2013. Figure 8 and Figure 9 provide a summary of the BTEX concentrations detected during the April 2013 and August 2013 sampling events, respectively.

## 3.1 Groundwater Monitoring

A summary of the groundwater analytical results 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 facility 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 bolded and highlighted in yellow. A copy of the respective analytical reports and Laboratory Quality Assurance Plan is included in Appendix B and Appendix C, respectively.

### *3.1.1 Groundwater Measurements*

Depth-to-groundwater and depth-to-product measurements were collected at all refinery monitoring wells, recovery wells, observation wells, and collection wells in April and August 2013, with the exception of CW 25+95 the reason being it continually pumps to protect the ground water from moving around the end of the slurry wall and continuing to the river. 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 Refinery Complex 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 2013, groundwater surface elevations were calculated. The groundwater elevation data was used to developed groundwater potentiometric surface maps which show the general direction of groundwater flow within the Refinery Complex area. Table 1 provides a summary of the fluid level measurements collected in 2013. Figure 4 and Figure 5 represent the groundwater contours developed from data collected in April 2013 and August 2013, respectively. The groundwater contours show that groundwater flows in the general 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 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 Appendix A. Table 2 provides a summary of the groundwater field parameters collected during the April 2013 and August 2013 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 Refinery Complex Sampling*

Refinery Wells

Volatile organic compounds detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- 1, 2, 4-Trimethylbenzene was detected above the respective screening level of 15 ug/l at, MW-30, and MW-31. The detected concentrations were 3600 ug/l and 1500 ug/l, respectively. The highest concentration was detected at MW-30 in August 2013.
- 1,3,5-trimethylbenzene was detected above the respective screening level of 12 ug/l at MW-30, and MW-31. The detected concentrations were 760 ug/l and 98 ug/l respectively. The highest concentration detected at MW-30 in August 2013.
- 1-Methylnaphthalene was detected above the respective screening level of 2.3 ug/l at MW-4 with a concentration of 17 ug/l in August 2013.
- Benzene was detected above the respective screening level of 5 ug/l at MW-4, RW-15, MW-30, and MW31. The detected concentrations ranged between 30 ug/l and 5700 ug/l, with the highest concentration detected at MW-30 in April 2013.
- Ethylbenzene was detected above the respective screening level of 700 ug/l at MW-30 and MW-31. The detected concentrations ranged between 960 ug/l and 5400 ug/l, with the highest concentration detected at MW-30 in April 2013.
- Naphthalene was detected above the respective screening level of 1.43 ug/l at MW-4, RW-15, MW-30, and MW-31.The detected concentrations ranged between 3.1 ug/l and 610 ug/l, with the highest concentration detected at MW-30 in August 2013.
- Toluene was detected above the respective screening level of 750 ug/l at MW-30. The detected concentration was 6300 ug/l in August 2013.
- Xylenes were detected above the respective screening level of 620 ug/l at MW-30, and MW-31. The detected concentrations ranged between 8.3 ug/l and 18,000 ug/l, with the highest concentration detected at MW-30 in April 2013.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Chloride was detected above the respective screening level of 250 mg/l at, RW-15 and MW-31. The detected concentrations were the same at 360 mg/l.
- Nitrates were detected above the respective screening level of 10 mg/L at MW-8. The detected concentration was 13 mg/L in August 2013.

- Sulfate was detected above the respective screening level of 600 mg/l at MW-8, and MW-44. The detected concentrations were 990 mg/l and 2800 mg/l, respectively.

Total metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Barium was detected above the respective screening level of 1.0 mg/l at MW-4 with the detected concentration at 2.3 mg/l in August 2013.
- Chromium was detected above the respective screening level of 0.05 mg/l at MW-8 with the detected concentration at 0.46 mg/l in August 2013.
- Lead was detected above the respective screening level of 0.015 mg/l at MW-30, and MW-44. The detected concentrations were 0.031 mg/l and 0.023 mg/l, respectively.

Dissolved metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions

- Barium was detected above the respective screening level of 1.0 mg/l at MW-4, and RW-15. The detected concentrations were mg/l 2.1 and 1.1 mg/l, respectively. The highest concentration detected in August 2013.
- Iron was detected above the respective screening level of 1.0 mg/l at MW-4, MW-8, RW-15, and RW-30. The detected concentrations ranged between 2.5 mg/l and 12 mg/l, with the highest concentration detected at MW-4 in August 2013.
- Manganese was detected above the respective screening level of 0.2 mg/l at MW-4, MW-8, RW-15, MW-29, MW-30, MW-31 and MW-44. The detected concentrations ranged between 0.56 mg/l and 2.8 mg/l, with the highest concentration detected at MW-4 in August 2013.

Total petroleum hydrocarbons detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Diesel range organics were detected above the respective screening level of 0.2 mg/l at MW-4, RW-15, MW-30, MW-31, and MW-44. The detected concentrations ranged between 0.26 mg/l and 9.9 mg/l, with the highest concentration detected at MW-30 in August 2013.

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

Cross-Gradient Wells

Volatile organic compounds detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Chloride was detected above the respective screening level of 250 mg/l at MW-27, and MW-32, and MW-33. The detected concentrations ranged between 470 mg/l and 600 mg/l, with the highest concentration detected at MW-32 in August 2013.
- Nitrate was detected above the respective screening level of 10 mg/l at MW-32, and MW-33. The detected concentrations were 41 mg/l and 19 mg/l, respectively. The highest concentration detected in August 2013.

- Sulfate was detected above the respective screening level of 600 mg/l at MW-13, MW-27, MW-32, and MW-33. The detected concentrations ranged between 1,200 mg/l and 3,200 mg/l, with the highest concentration detected at MW-27 in August 2013.

Total metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013.

Dissolved metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Manganese was detected above the respective screening level of 0.2 mg/l at MW-13 and MW-27. The detected concentrations were 1.1 mg/l and 1.3 mg/l, respectively. The highest concentration detected in August 2013.
- Selenium was detected above the respective screening level of 0.05 mg/l at MW-27(1.2 mg/l.

Total petroleum hydrocarbons detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013.

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 2013, with the following exceptions:

- 1,2,4-Trimethylbenzene was detected above the respective screening level of 15 ug/l at MW-11 with the concentration detected at 270 ug/l in August 2013.
- Naphthalene was detected above the respective screening level of 1.43 ug/l at MW-11 with the concentration detected at 76 ug/l in August 2013.

Semi-Volatile organic compounds detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Chloride was detected above the respective screening level of 250 mg/l at MW-11, MW-35, and MW-37, with the highest concentration detected at MW-11 with a concentration of 300 ug/l in August 2013.

Total metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Barium was detected above the respective screening level of 1.0 mg/l at MW-11 and MW-35, with both detected concentrations at 1.1 mg/l in August 2013.
- Chromium was detected above the respective screening level of 0.05 mg/l at MW-12 at a concentration of 0.29 mg/l in August 2013.

Dissolved metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Barium was detected above the respective screening level of 1.0 mg/l at MW-11 and with the concentration detected at 1.1 mg/l in August 2013.
- Iron was detected above the respective screening level of 1.0 mg/l at MW-11, MW-34, MW-35, and MW-38. The detected concentrations ranged between 3.1 mg/l and 11 mg/l, with the highest concentration detected at MW-11 in August 2013.
- 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 ranged between 1.2 mg/l and 4.2 mg/l, with the highest concentration detected at MW-34 in August 2013.

Total petroleum hydrocarbons detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Diesel range organics were detected above the respective screening level of 0.2 mg/l at MW-11, MW-34, MW-35 and MW-38. The detected concentrations ranged between 0.53 mg/l and 2.5 mg/l, with the highest concentration detected at MW-11.

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 2013, 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 1800 ug/l detected in August 2013.
- 1,2-Dichloroethane was detected at MW-65, with a detected concentration 160 ug/l detected in August 2013.
- 1,3,5-trimethylbenzene was detected above the respective screening level of 12 ug/l at MW-65, with a concentration detected of 36 ug/l in August 2013.
- 1-Methylnaphthalene was detected above the respective screening level of 2.3 ug/l at MW-59 and MW-65. The detected concentration ranged between 5.7 ug/l and 120 ug/l with the highest concentration detected at MW-65 of 120 ug/l in August 2013.
- 2-Methylnaphthanele was detected above the respective screening level of 150 ug/l at MW-65, with a detected concentration of 190 ug/l.
- Benzene was detected above the respective screening level of 5 ug/l at MW-59 and MW-65. The detection concentration was 13 ug/l and 6800 ug/l, respectively. The highest detected concentrations at MW-65 in August 2013.
- Ethylbenzene was detected above the respective screening level of 700 ug/l at MW-65 (1,700 ug/l).
- MTBE was detected above the respective screening level of 125 ug/l at MW-59, and MW-65. The detected concentration was 530 ug/l and 950 ug/l respectively.
- Naphthalene was detected above the respective screening level of 1.43 ug/l at MW-59 and MW-65. The detection concentration ranged between 15 ug/l and 430 with the highest concentration detected at MW-65 of 430 ug/l.

Semi-volatile organic compounds detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- 1-Methylnaphthalene was detected above the respective screening level of 2.3 ug/l at MW-65, with a detected concentration of 80 ug/l.
- Naphthalene was detected above the respective screening level of 1.43 ug/l at MW-65 with the detected concentration at 310 ug/l in August 2013.
- Phenol was detected above the respective screening level of 5 ug/l at MW-65, with a detected concentration of 39 ug/l.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Chloride was detected above the respective screening level of 250 mg/l at MW-52, MW-53, MW-63 and MW-64. The detected concentrations were 370 mg/l and 920 mg/l respectively. The highest concentration detected at MW-64.
- Nitrate was detected above the respective screening level of 10 mg/l at MW-52, MW-53, MW-63, and MW-64. The detected concentrations were 14 mg/l and 150 mg/l respectively. The highest concentration detected at MW-63.
- Sulfate was detected above the respective screening level of 600 mg/l at MW-52, MW-53, MW-62, MW-63, MW-64 and MW-65. The detected concentrations were 1,200 mg/l and 3,600 mg/l respectively. The highest concentration detected at MW-62.

Dissolved metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Iron was detected above the respective screening level of 1.0 mg/l at MW-59 and MW-65. The detected concentrations were 7.3 mg/l and 8.9 mg/l respectively.
- Manganese was detected above the respective screening level of 0.2 mg/l at MW-50, MW-51, MW-52, MW-59, MW-62, MW-63, and MW-65. The detected concentrations ranged between 1 mg/l and 3.7 mg/l, with the highest concentration detected at MW-65.
- Selenium was detected above the respective screening level of 0.05 ug/l at MW-52 and MW-63. The detected concentrations were 0.052 mg/l and 0.057 mg/l, respectively.
- Uranium was detected above the respective screening level of 0.03 mg/l at MW-63, with a detected concentration of 0.055 mg/l.

Total petroleum hydrocarbons detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Diesel range organics were detected above the respective screening level of 0.2 mg/l at MW-59, MW-63, and MW-65. The detected concentration ranged between 0.68 mg/l and 5.2 mg/l with the highest concentration detected at MW-65 in August 2013.

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

### *3.1.4 North Boundary Barrier Sampling*

Collection Wells

Volatile organic compounds detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Benzene was detected above the respective screening level of 0.005 mg/l at CW 0+60 and CW 25+95. The detected concentrations ranged between 0.014 mg/l and 0.81 mg/l, with the highest concentration detected at CW 25-95 in April 2013.

Total petroleum hydrocarbons detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Diesel range organics were detected above the respective screening level of 0.2 mg/l at CW 0+60 and CW 25+95. The detected concentrations ranged between 0.23 mg/l and 1.7 mg/l. The highest concentration was detected at CW 0+60 in April 2013.

A summary of the analytical results for samples collected at the collection Wells in 2013 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 2013, with the following exceptions:

- MTBE was detected above the respective screening level of 0.012 mg/l at OW 16+60 and OW 22+00. The detected concentrations ranged between 0.02 mg/l and 0.81 mg/l respectively. The highest concentration detected at OW 16+60 in April 2013.

Total petroleum hydrocarbons detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Diesel range organics were detected above the respective screening level of 0.2 mg/l at OW 3+85, OW 16+60, OW 22+00, OW 23+10, and OW 23+90. The detected concentration ranged between 0.32 mg/l and 43 mg/l with the highest detection concentration at OW 3+85 in April 2013.

A summary of the analytical results for samples collected at the observation wells in 2013 is provided in Table 7.

### *3.1.5 San Juan River Bluff Sampling*

Outfalls

Samples were collected from East Outfall #2 and East Outfall #3 in April and August 2013. A summary of the analytical results for samples collected at East Outfall #2 and East Outfall #3 in 2013 is provided in Table 8.

Volatile organic compounds detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions

- Nitrate was detected above the respective screening level of 10 mg/l at East Outfall #3 (24 mg/l) in August 2013.
- Nitrite was detected above the respective screening level of 1 mg/l at East Outfall #2, and East Outfall #3. The detected concentrations were 2.5 mg/l and 24 mg/l, respectively. The highest concentration detected at East Outfall #3 in August 2013.

Total metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013.

Dissolved metals constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013.

Seeps

Samples were collected from Seep 1, Seep 3, Seep 6 and Seep 9 in 2013. The remaining seeps were not sampled due to lack of water for sample collection.

Volatile organic compounds detected above laboratory detection limit were below their respective screening levels in samples collected for 2013.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Chloride was detected above the respective screening level of 250 mg/l at Seep 6, and Seep 9. The detected concentrations ranged between 600 mg/l and 8,700 mg/l, with the highest concentration detected at Seep 6 in August 2013.
- Sulfate was detected above the respective screening level of 600 mg/l at Seep 1, Seep 3 Seep 6, and Seep 9. The detected concentrations ranged between 1,600 mg/l and 2,800 mg/l, with the highest concentration detected at Seep 6 in August 2013.

A summary of the analytical results for samples collected at the Seeps in 2013 is provided in Table 9.

### *3.1.6 San Juan River Terrace Sampling*

Sample locations related to the bioventing system are reporting in a separate report, and therefore are not included in this submittal. However, samples were collected at four locations along the San Juan River in 2013. Samples were collected in April 2013 and August 2013 upstream of the refinery, north of MW-46, North of MW-45, and downstream of the refinery.

A summary of the analytical results for samples collected at North of MW-46, North of MW-45, Upstream, and downstream in 2013 is provided in Table 10.

Volatile organic compounds detected above laboratory detection limit were below their respective screening levels in samples collected for 2013.

Total Petroleum Hydrocarbon detected above laboratory detection limit was below their respective screening levels in samples collected for 2013.

General chemistry parameters detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013.

Total Metal constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Barium was detected above the respective screening level of 1.0 mg/l at North of MW-45, North of MW-46, Upstream, and Downstream. The detected concentrations ranged between2.0 mg/l and 2.5 mg/l, with the highest concentration detected at Upstream in August 2013.
- Chromium was detected above the respective screening level of 0.05 mg/l at North of MW-45, North of MW-46, Upstream, and Downstream. The detected concentrations were 0.26 mg/l and 0.32 mg/l, with the highest concentration detected at Upstream in August 2013.
- Lead was detected above the respective screening level of 0.015 mg/l at North of MW-45, North of MW-46, Upstream, and Downstream. The detected concentrations ranged between 0.050 mg/l and 0.078 mg/l, with the highest concentration detected at Downstream in August 2013.

Dissolved Metal constituents detected above the laboratory detection limit were below their respective screening levels in samples collected in 2013, with the following exceptions:

- Iron was detected above the respective screening level of 1.0 mg/l at North of MW-45, Upstream, and Downstream. The detected concentrations were 11 mg/l and 40 mg/l, with the highest concentration detected at Downstream in August 2013.

Figure 3 shows the location of the San Juan River samples in relation to the Bloomfield Refinery.

### *3.1.7 Outfall and Seep Inspections*

Bi-monthly visual inspections of Seeps 1 through 9 and along the San Juan River Bluff, including the East Fork area, were conducted in 2013. 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. Fluids that contain concentrations above drinking water standards at the seep locations are pumped out completely to ensure such water does not impact the river.

Visual inspection of the East Fork area indicates that the flow rate at this seep location has remained constant at approximately 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 Refinery.

## 3.2 Separate-Phase Hydrocarbons

Field measurements collected in April and August 2013 were also used to determine product thickness in areas where SPH was detected. In April 2013, SPH was identified in 20 wells. The product thickness detected ranged between 0.01 feet and 1.15 feet, with the most product detected at recovery well RW-28. In August 2013, SPH was identified in 25 wells, which includes RW-1 and RW-18 at which SPH was detected after bailing commenced. The product thickness ranged between 0.01 feet and 1.12 feet, with the most product detected at RW-28.

Figure 6 and Figure 7 show a summary of the product thickness detected in April 2013 and August 2013, respectively.

Product has been detected in the groundwater prior to suspension of refining operations in November 2009. Review of the past seven 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 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 three years, SPH has been detected at MW-61, which is located just east of the Terminal office building. The average SPH thickness at MW-61 has been approximately 0.6 feet. At MW-66, located west of Tank 45, the amount of SPH has fluctuated between 0.05 feet and 0.29 feet.

*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). Each well is equipped with a dedicated pneumatic pump that operates 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 provides hydraulic relieve 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 2013, MW-54 contained approximately 0.19 feet of SPH. 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.

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. SPH has not been detected at RW-2 since August 2010. This well has shown traces of SPH prior to returning to operation in 2012, with SPH detected at 0.05 feet or less.

Monitoring well MW-41, located adjacent to the crude process unit, has shown fluctuating levels of SPH over the years. The range of SPH detected has been between 0.01 feet and 1.18 feet since 2007. As of August 2013, MW-41 contained 0.92 feet of SPH.

The SPH level at RW-42, an active recovery well located upstream 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 2013, the amount of SPH detected was 0.15 feet.

In the area near the WWTP and north of the 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 the numerous active fluids pumping wells, as well as the existence of the north boundary barrier providing that hydraulic control all groundwater beneath the former process areas. To further enhance the product recovery efforts in this area, work has been done to equipped 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 fully 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.

*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 amount of groundwater detected in these wells is significantly less than the wells located on the refinery-side of the wall, giving proof that the hydraulic barrier is effective. The intermediate detections of SPH are believed to be the residual effect SPH in the area that existed. Absorbent socks are placed in observation and monitoring wells located along the river-side of the slurry wall to remove the residual SPH in the area.

## 3.3 Total Fluids Recovery Systems

### *3.3.1 Groundwater Recovery System*

In 2013, 19 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-18, MW-20, RW-22, RW-23, RW-28, RW-42, RW-43, MW-55, MW-56, MW-57 and MW-58. The estimated total gallons pumped (SPH and groundwater) from the recover wells in 2013 was approximately 1,732,100 gallons. 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 pumps per well over time is calculated. The calculated

total is based on 360 days of operation. This time period takes into account the five days the wells were off when groundwater measurements were collected prior to each monitoring event, and time when the wells were maintenance.

In 2013, the work to place five existing monitoring wells into fluids recovery service has been completed. The five monitoring wells located within the vicinity of the aeration ponds (MW-55, MW-56, MW-57, MW-58, and MW-20) have been equipped with dedicated pneumatic pumps set to operate on a timer system. These wells operate as total fluid recovery wells. All fluids pumped discharge into a common pipeline that is routed to the on-site WWTP for product recovery and treatment.

### *3.3.2 North Boundary Barrier Wall Collection System*

Depth-to-groundwater measurements collected in April 2013 and August 2013 indicate that the barrier wall continues to provide a hydraulic barrier for groundwater below the facility. Based on the data collected in 2013, 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).

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 Refinery. All recovered water through the Hammond Ditch French drain west of pipeline easement discharges to Tank 37, which is then transferred to the Refinery's API separator for product recovery. The location of Tank 37 is shown on Figure 3. Refinery Operators inspects that operation of Tank 37 daily and records the amount of water recovered by the tank using the flow meter located on the discharge end of the Tank 37 transfer pump. In 2013, the total volume of fluids recovered at Tank 37 was approximately 2,346,792 gallons.

### *3.3.4 East Outfall Recovery System*

Total fluids from Outfall 1 is recovered via Tank 38 and transferred to the Refinery's WWTS for treatment prior to disposal through the on-site injection well. Figure 3 shows the location of Tank 38.

Prior to 2012, the weakened integrity of the canal lining resulted in significant flow increases to Tank 38 during the time that the Hammond Ditch was operational. During such times, the increase in inlet flow to Tank 38 increased to over 100 gpm.

In March 2013, Western initiated an additional effort to seal the crack in the ditch lining within the vicinity of Tank 38. This effort has resulted in a decrease in flow into Tank 38 when the ditch is operational. When the ditch is not operational, the average flowrate into Tank 38 is approximately 12 gpm.

Tank 38 piping is equipped with a flow meter to measure the total gallons transferred to the WWTP. In 2013, the total fluid volume recovered at Tank 38 was approximately 15,996,242 gallons.

## 3.4 Below-Grade Testing and Inspections

Pursuant to conditions of approval stated in Discharge Permit GW-001 (regulated by the Oil Conservation Division), Bloomfield Refinery personnel conducted annual below-grade sump testing and underground process/wastewater line testing. In 2013 all but one water-draw sump located in the Tank Farm were tested. Sumps within the facility were cleaned out with a vacuum truck, visually inspected, and hydrostatically tested, for a minimum of 60 minutes if required to insure integrity. 14 of the sewer boxes were removed from service and 4 remain in service since the shutdown and demolition of the Refinery which began in 2013. All sumps tested in 2013 passed and were returned to normal service. Double-walled steel (DW Steel) sumps were also inspected through the leak detection port. No evidence of moisture was observed.

In addition, approximately 1528 feet of underground piping was hydrostatically tested at Bloomfield Refinery in 2013. The piping was located in the Process Unit area, River Terrace transfer piping, Tank Farm transfer piping, and Terminals. Testing of underground process piping includes pressuring-up the piping to a set-point of approximately 150% of the normal operating pressure. The test piping remains pressured for a minimum of 30 minutes, at the end of which the piping pressure is compared to the original set pressure. Piping that did not lose pressure over the testing period was considered acceptable for service. No issues were identified during underground piping testing in 2013. Appendix D summarizes the underground piping testing and up-dated tank inspection schedule.

## 3.5 Waste Disposal

Western Refining indefinitely suspended refining operations at the Bloomfield Refinery 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 Wastewater Treatment System (WWTS). Treated water is then disposed of through the on-site Class I injection well.

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. A summary of such wastes, including a water balance sheet for 2013 is provided in Appendix E.

# 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, 2010, New Mexico Oil Conservation Division, Discharge Permit Renewal (GW-001) Bloomfield Refinery, July 7, 2010.

# TABLE 1
## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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) |
|---|---|---|---|---|---|---|---|
| MW-01 | 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 |
| | 08/06/12 | 5519.21 | 21.56 | NPP | 17.11 | 5502.10 | NPP |
| | 04/02/12 | 5519.21 | 21.56 | NPP | 17.56 | 5501.65 | NPP |
| | 08/16/11 | 5519.21 | 21.56 | NPP | 16.99 | 5502.22 | NPP |
| | 04/11/11 | 5519.21 | 21.56 | NPP | 17.47 | 5501.74 | NPP |
| MW-03 | 08/05/13 | 5539.27 | 36.75 | NPP | NWP | NWP | NPP |
| | 04/08/13 | 5539.27 | 36.75 | NPP | NWP | NWP | NPP |
| | 08/06/12 | 5539.27 | 36.75 | NPP | 36.42 | 5502.85 | NPP |
| | 04/02/12 | 5539.27 | 36.75 | NPP | NWP | NWP | NPP |
| | 08/16/11 | 5539.27 | 36.75 | NPP | 36.43 | 5502.84 | NPP |
| | 04/11/11 | 5539.27 | 36.75 | NPP | 36.53 | 5502.74 | NPP |
| MW-04 | 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 |
| | 08/06/12 | 5527.78 | 30.48 | NPP | 27.40 | 5500.38 | NPP |
| | 04/02/12 | 5527.78 | 30.48 | NPP | 27.43 | 5500.35 | NPP |
| | 08/17/11 | 5527.78 | 30.48 | NPP | 27.27 | 5500.51 | NPP |
| | 04/11/11 | 5527.78 | 30.48 | NPP | 27.23 | 5500.55 | NPP |
| MW-05 | 08/05/13 | 5548.56 | 37.20 | NPP | NWP | NWP | NPP |
| | 04/08/13 | 5548.56 | 37.20 | NPP | NWP | NWP | NPP |
| | 08/06/12 | 5548.56 | 37.20 | NPP | NWP | NWP | NPP |
| | 04/02/12 | 5548.56 | 37.20 | NPP | NWP | NWP | NPP |
| | 08/17/11 | 5548.56 | 37.20 | NPP | NWP | NWP | NPP |
| | 04/11/11 | 5548.56 | 37.20 | NPP | NWP | NWP | NPP |
| MW-06 | 08/05/13 | 5554.61 | 48.00 | NPP | NWP | NWP | NPP |
| | 04/08/13 | 5554.61 | 48.00 | NPP | NWP | NWP | NPP |
| | 08/06/12 | 5554.61 | 48.00 | NPP | NWP | NWP | NPP |
| | 04/02/12 | 5554.61 | 48.00 | NPP | NWP | NWP | NPP |
| | 08/17/11 | 5554.61 | 48.00 | NPP | NWP | NWP | NPP |
| | 04/11/11 | 5554.61 | 48.00 | NPP | NWP | NWP | NPP |
| MW-07 | 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 |
| | 08/06/12 | 5527.66 | 62.61 | NPP | 27.87 | 5499.79 | NPP |
| | 04/02/12 | 5527.66 | 62.61 | NPP | 27.40 | 5500.26 | NPP |
| | 08/17/11 | 5527.66 | 62.61 | NPP | 27.65 | 5500.01 | NPP |
| | 04/11/11 | 5527.66 | 62.61 | NPP | 27.25 | 5500.41 | NPP |
| MW-08 | 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 |
| | 08/06/12 | 5534.58 | 35.93 | NPP | 31.70 | 5502.88 | NPP |
| | 04/02/12 | 5534.58 | 35.93 | NPP | 31.94 | 5502.64 | NPP |
| | 08/17/11 | 5534.58 | 35.93 | NPP | 31.72 | 5502.86 | NPP |
| | 04/11/11 | 5534.58 | 35.93 | NPP | 31.94 | 5502.64 | NPP |
| MW-11 | 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 |
| | 08/06/12 | 5510.31 | 22.94 | NPP | 11.72 | 5498.59 | NPP |
| | 04/02/12 | 5510.31 | 22.94 | NPP | 11.90 | 5498.41 | NPP |
| | 08/16/11 | 5510.31 | 22.94 | NPP | 11.64 | 5498.67 | NPP |
| | 04/11/11 | 5510.31 | 22.94 | NPP | 11.76 | 5498.55 | NPP |

# TABLE 1
## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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)* |
|---|---|---|---|---|---|---|---|
| MW-12 | 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 |
| | 08/06/12 | 5501.61 | 14.98 | NPP | 10.53 | 5491.08 | NPP |
| | 04/02/12 | 5501.61 | 14.98 | NPP | 10.54 | 5491.07 | NPP |
| | 08/16/11 | 5501.61 | 14.98 | NPP | 10.92 | 5490.69 | NPP |
| | 04/11/11 | 5501.61 | 14.98 | NPP | 10.48 | 5491.13 | NPP |
| MW-13 | 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 |
| | 08/06/12 | 5542.04 | 52.89 | NPP | 40.77 | 5501.27 | NPP |
| | 04/02/12 | 5542.04 | 52.89 | NPP | 40.72 | 5501.32 | NPP |
| | 08/16/11 | 5542.04 | 52.89 | NPP | 40.61 | 5501.43 | NPP |
| | 04/11/11 | 5542.04 | 52.89 | NPP | 40.55 | 5501.49 | NPP |
| MW-20 | 08/05/13 | 5519.9 | 27.13 | 20.69 | 21.41 | 5499.07 | 0.72 |
| | 04/08/13 | 5519.9 | 27.13 | 20.81 | 21.65 | 5498.92 | 0.84 |
| | 08/06/12 | 5519.9 | 27.13 | 20.66 | 21.60 | 5499.05 | 0.94 |
| | 04/02/12 | 5519.9 | 27.13 | 20.72 | 21.67 | 5498.99 | 0.95 |
| | 08/18/11 | 5519.9 | 27.13 | 20.73 | 21.34 | 5499.05 | 0.61 |
| | 04/11/11 | 5519.9 | 27.13 | 20.71 | 21.33 | 5499.07 | 0.62 |
| MW-21 | 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 |
| | 08/06/12 | 5521.99 | 30.38 | 21.75 | 21.80 | 5500.23 | 0.05 |
| | 04/02/12 | 5521.99 | 30.38 | 21.96 | 21.98 | 5500.03 | 0.02 |
| | 08/18/11 | 5521.99 | 30.38 | 21.84 | 21.87 | 5500.14 | 0.03 |
| | 04/11/11 | 5521.99 | 30.38 | 21.80 | 21.86 | 5500.18 | 0.06 |
| MW-25 | 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 |
| | 08/06/12 | 5533.99 | 41.20 | 33.12 | 33.15 | 5500.86 | 0.03 |
| | 04/02/12 | 5533.99 | 41.20 | 33.11 | 33.12 | 5500.88 | 0.01 |
| | 08/17/11 | 5533.99 | 41.20 | NPP | 32.97 | 5501.02 | NPP |
| | 04/11/11 | 5533.99 | 41.20 | 32.85 | 33.01 | 5501.11 | 0.16 |
| MW-26 | 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 |
| | 08/06/12 | 5517.88 | 25.11 | NPP | 17.71 | 5500.17 | NPP |
| | 04/02/12 | 5517.88 | 25.11 | NPP | 17.68 | 5500.20 | NPP |
| | 08/16/11 | 5517.88 | 25.11 | NPP | 17.58 | 5500.30 | NPP |
| | 04/11/11 | 5517.88 | 25.11 | NPP | 17.50 | 5500.38 | NPP |
| MW-27 | 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 |
| | 08/06/12 | 5518.67 | 24.42 | NPP | 20.89 | 5497.78 | NPP |
| | 04/02/12 | 5518.67 | 24.42 | NPP | 19.61 | 5499.06 | NPP |
| | 08/16/11 | 5518.67 | 24.42 | NPP | 20.26 | 5498.41 | NPP |
| | 04/11/11 | 5518.67 | 24.42 | NPP | 18.89 | 5499.78 | NPP |
| MW-29 | 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 |
| | 08/06/12 | 5524.97 | 28.62 | NPP | 23.06 | 5501.91 | NPP |
| | 04/02/12 | 5524.97 | 28.62 | NPP | 23.34 | 5501.63 | NPP |
| | 08/17/11 | 5524.97 | 28.62 | NPP | 23.04 | 5501.93 | NPP |
| | 04/11/11 | 5524.97 | 28.62 | NPP | 23.23 | 5501.74 | NPP |

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## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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)* |
|---|---|---|---|---|---|---|---|
| MW-30 | 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 |
| | 08/06/12 | 5536.83 | 40.13 | NPP | 34.02 | 5502.81 | NPP |
| | 04/02/12 | 5536.83 | 40.13 | NPP | 34.22 | 5502.61 | NPP |
| | 08/17/11 | 5536.83 | 40.13 | NPP | 34.03 | 5502.80 | NPP |
| | 04/11/11 | 5536.83 | 40.13 | NPP | 34.42 | 5502.41 | NPP |
| MW-31 | 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 |
| | 08/06/12 | 5536.24 | 39.16 | NPP | 34.40 | 5501.84 | NPP |
| | 04/02/12 | 5536.24 | 39.16 | NPP | 34.35 | 5501.89 | NPP |
| | 08/16/11 | 5536.24 | 39.16 | NPP | 34.30 | 5501.94 | NPP |
| | 04/11/11 | 5536.24 | 39.16 | NPP | 34.24 | 5502.00 | NPP |
| MW-32 | 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 |
| | 08/06/12 | 5525.64 | 27.51 | NPP | 25.42 | 5500.22 | NPP |
| | 04/02/12 | 5525.64 | 27.51 | NPP | 25.38 | 5500.26 | NPP |
| | 08/16/11 | 5525.64 | 27.51 | NPP | 25.27 | 5500.37 | NPP |
| | 04/11/11 | 5525.64 | 27.51 | NPP | 25.23 | 5500.41 | NPP |
| MW-33 | 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 |
| | 08/06/12 | 5521.79 | 25.51 | NPP | 23.36 | 5498.43 | NPP |
| | 04/02/12 | 5521.79 | 25.51 | NPP | 22.73 | 5499.06 | NPP |
| | 08/16/11 | 5521.79 | 25.51 | NPP | 22.81 | 5498.98 | NPP |
| | 04/11/11 | 5521.79 | 25.51 | NPP | 22.52 | 5499.27 | NPP |
| MW-34 | 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 |
| | 08/06/12 | 5511.63 | 20.96 | NPP | 14.33 | 5497.30 | NPP |
| | 04/02/12 | 5511.63 | 20.96 | NPP | 14.37 | 5497.26 | NPP |
| | 08/16/11 | 5511.63 | 20.96 | NPP | 14.43 | 5497.20 | NPP |
| | 04/11/11 | 5511.63 | 20.96 | NPP | 14.47 | 5497.16 | NPP |
| MW-35 | 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 |
| | 08/06/12 | 5518.95 | 26.45 | NPP | 22.29 | 5496.66 | NPP |
| | 04/02/12 | 5518.95 | 26.45 | NPP | 22.30 | 5496.65 | NPP |
| | 04/11/11 | 5518.95 | 26.45 | NPP | 22.38 | 5496.57 | NPP |
| | 08/16/34 | 5518.95 | 26.45 | NPP | 22.41 | 5496.54 | NPP |
| MW-36 | 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 |
| | 08/06/12 | 5516.95 | 23.26 | NPP | 20.82 | 5496.13 | NPP |
| | 04/02/12 | 5516.95 | 23.26 | NPP | 21.02 | 5495.93 | NPP |
| | 08/17/11 | 5516.95 | 23.26 | NPP | 20.98 | 5495.97 | NPP |
| | 04/11/11 | 5516.95 | 23.26 | NPP | 21.02 | 5495.93 | NPP |
| MW-37 | 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 |
| | 08/06/12 | 5519.62 | 27.58 | NPP | 23.51 | 5496.11 | NPP |
| | 04/02/12 | 5519.62 | 27.58 | NPP | 23.58 | 5496.04 | NPP |
| | 08/16/11 | 5519.62 | 27.58 | NPP | 23.63 | 5495.99 | NPP |
| | 04/11/11 | 5519.62 | 27.58 | NPP | 23.60 | 5496.02 | NPP |

# TABLE 1
## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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) |
|---|---|---|---|---|---|---|---|
| MW-38 | 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 |
| | 08/06/12 | 5519.19 | 26.82 | NPP | 23.78 | 5495.41 | NPP |
| | 04/02/12 | 5519.19 | 26.82 | NPP | 23.80 | 5495.39 | NPP |
| | 08/16/11 | 5519.19 | 26.82 | NPP | 23.96 | 5495.23 | NPP |
| | 04/11/11 | 5519.19 | 26.82 | NPP | 23.85 | 5495.34 | NPP |
| MW-39 | 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 |
| | 08/06/12 | 5520.83 | 38.34 | NPP | 26.05 | 5494.78 | NPP |
| | 04/02/12 | 5520.83 | 38.34 | NPP | 25.76 | 5495.07 | NPP |
| | 08/08/11 | 5520.83 | 38.34 | NPP | 25.88 | 5494.95 | NPP |
| | 04/11/11 | 5520.83 | 38.34 | NPP | 25.80 | 5495.03 | NPP |
| MW-40 | 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 |
| | 08/06/12 | 5527.31 | 30.07 | 28.44 | 28.72 | 5498.81 | 0.28 |
| | 04/02/12 | 5527.31 | 30.07 | NPP | 28.57 | 5498.74 | NPP |
| | 08/17/11 | 5527.31 | 30.07 | NPP | 28.37 | 5498.94 | NPP |
| | 04/11/11 | 5527.31 | 30.07 | NPP | 28.38 | 5498.93 | NPP |
| MW-41 | 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 |
| | 08/06/12 | 5526.41 | 31.62 | 26.86 | 27.94 | 5499.33 | 1.08 |
| | 04/02/12 | 5526.41 | 31.62 | 26.89 | 28.07 | 5499.28 | 1.18 |
| | 08/08/11 | 5526.41 | 31.62 | 26.95 | 27.55 | 5499.34 | 0.60 |
| | 04/11/11 | 5526.41 | 31.62 | 26.71 | 27.30 | 5499.58 | 0.59 |
| MW-44 | 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 |
| | 08/06/12 | 5535.44 | 50.91 | NPP | 34.42 | 5501.02 | NPP |
| | 04/02/12 | 5535.44 | 50.91 | NPP | 33.93 | 5501.51 | NPP |
| | 08/17/11 | 5535.44 | 50.91 | NPP | 34.22 | 5501.22 | NPP |
| | 04/11/11 | 5535.44 | 50.91 | NPP | 34.00 | 5501.44 | NPP |
| MW-45 | 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 |
| | 08/06/12 | 5506.36 | 16.92 | 11.97 | 12.10 | 5494.36 | 0.13 |
| | 04/02/12 | 5506.36 | 16.92 | 11.95 | 12.08 | 5494.38 | 0.13 |
| | 08/08/11 | 5506.36 | 16.92 | NPP | 11.89 | 5494.47 | NPP |
| | 04/11/11 | 5506.36 | 16.92 | 11.98 | 12.13 | 5494.35 | 0.15 |
| MW-46 | 08/05/13 | 5504.65 | 10.39 | NPP | NWP | NWP | NPP |
| | 04/08/13 | 5504.65 | 10.39 | NPP | NWP | NWP | NPP |
| | 08/06/12 | 5504.65 | 10.39 | NPP | NWP | NWP | NPP |
| | 04/02/12 | 5504.65 | 10.39 | NPP | NWP | NWP | NPP |
| | 08/08/11 | 5504.65 | 10.39 | NPP | NWP | NWP | NPP |
| | 04/11/11 | 5504.65 | 10.39 | NPP | NWP | NWP | NPP |
| MW-47 | 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 |
| | 08/06/12 | 5506.77 | 14.28 | 13.22 | 13.27 | 5493.54 | 0.05 |
| | 04/02/12 | 5506.77 | 14.28 | 12.85 | 13.17 | 5493.86 | 0.32 |
| | 08/08/11 | 5506.77 | 14.28 | 13.47 | 13.48 | 5493.30 | 0.01 |
| | 04/11/11 | 5506.77 | 14.28 | 12.85 | 13.28 | 5493.83 | 0.43 |

# TABLE 1
## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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)* |
|---|---|---|---|---|---|---|---|
| MW-50 | 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 |
| | 08/22/11 | 5518.79 | 20.00 | NPP | 16.69 | 5502.10 | NPP |
| | 04/11/11 | 5518.79 | 20.00 | NPP | 17.10 | 5501.69 | NPP |
| MW-51 | 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 |
| | 08/06/12 | 5515.58 | 20.00 | NPP | 14.65 | 5500.93 | NPP |
| | 04/02/12 | 5515.58 | 20.00 | NPP | 15.00 | 5500.58 | NPP |
| | 08/22/11 | 5515.58 | 20.00 | NPP | 14.55 | 5501.03 | NPP |
| | 04/11/11 | 5515.58 | 20.00 | NPP | 14.94 | 5500.64 | NPP |
| MW-52 | 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 |
| | 08/06/12 | 5538.63 | 41.00 | NPP | 36.28 | 5502.35 | NPP |
| | 04/02/12 | 5538.63 | 41.00 | NPP | 36.50 | 5502.13 | NPP |
| | 08/22/11 | 5538.63 | 41.00 | NPP | 36.31 | 5502.32 | NPP |
| | 04/11/11 | 5538.63 | 41.00 | NPP | 36.47 | 5502.16 | NPP |
| MW-53 | 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 |
| | 08/06/12 | 5541.32 | 41.50 | NPP | 38.93 | 5502.39 | NPP |
| | 04/02/12 | 5541.32 | 41.50 | NPP | 39.10 | 5502.22 | NPP |
| | 08/22/11 | 5541.32 | 41.50 | NPP | 38.97 | 5502.35 | NPP |
| | 04/11/11 | 5541.32 | 41.50 | NPP | 39.05 | 5502.27 | NPP |
| MW-54 | 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 |
| | 08/06/12 | 5530.08 | 38.00 | 32.40 | 32.61 | 5497.64 | 0.21 |
| | 04/02/12 | 5530.08 | 38.00 | 32.75 | 33.09 | 5497.26 | 0.34 |
| | 08/22/11 | 5530.08 | 38.00 | 32.84 | 33.23 | 5497.16 | 0.39 |
| | 04/11/11 | 5530.08 | 38.00 | 32.90 | 33.31 | 5497.10 | 0.41 |
| MW-55 | 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 |
| | 08/06/12 | 5519.84 | 27.25 | 21.81 | 22.53 | 5497.89 | 0.72 |
| | 04/02/12 | 5519.84 | 27.25 | NPP | 22.07 | 5497.77 | NPP |
| | 08/22/11 | 5519.84 | 27.25 | NPP | 21.27 | 5498.57 | NPP |
| | 04/11/11 | 5519.84 | 27.25 | NPP | 22.04 | 5497.80 | NPP |
| MW-56 | 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 |
| | 08/06/12 | 5519.31 | 23.75 | 19.76 | 20.69 | 5499.36 | 0.93 |
| | 04/02/12 | 5519.31 | 23.75 | 19.86 | 21.00 | 5499.22 | 1.14 |
| | 08/22/11 | 5519.31 | 23.75 | 19.74 | 20.83 | 5499.35 | 1.09 |
| | 04/11/11 | 5519.31 | 23.75 | 19.50 | 20.45 | 5499.62 | 0.95 |

# TABLE 1
## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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) |
|---|---|---|---|---|---|---|---|
| MW-57 | 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 |
| | 08/06/12 | 5521.17 | 24.25 | 21.44 | 22.37 | 5499.54 | 0.93 |
| | 04/02/12 | 5521.17 | 24.25 | 21.50 | 22.79 | 5499.41 | 1.29 |
| | 08/22/11 | 5521.17 | 24.25 | 21.30 | 22.78 | 5499.57 | 1.48 |
| | 04/11/11 | 5521.17 | 24.25 | 21.27 | 22.85 | 5499.58 | 1.58 |
| MW-58 | 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 |
| | 08/06/12 | 5520.29 | 27.00 | 20.98 | 22.05 | 5499.10 | 1.07 |
| | 04/02/12 | 5520.29 | 27.00 | 20.98 | 22.13 | 5499.08 | 1.15 |
| | 08/22/11 | 5520.29 | 27.00 | 20.90 | 21.99 | 5499.17 | 1.09 |
| | 04/11/11 | 5520.29 | 27.00 | 21.03 | 21.09 | 5499.25 | 0.06 |
| MW-59 | 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 |
| | 08/06/12 | 5545.20 | 44.25 | NPP | 43.57 | 5501.63 | NPP |
| | 04/02/12 | 5545.20 | 44.25 | NPP | 43.54 | 5501.66 | NPP |
| | 08/25/11 | 5545.20 | 44.25 | NPP | 43.49 | 5501.71 | NPP |
| | 04/11/11 | 5545.20 | 44.25 | NPP | 43.43 | 5501.77 | NPP |
| MW-60 | 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 |
| | 08/06/12 | 5543.71 | 43.33 | NPP | 42.84 | 5500.87 | NPP |
| | 04/02/12 | 5543.71 | 43.33 | NPP | 42.79 | 5500.92 | NPP |
| | 08/25/11 | 5543.71 | 45.50 | NPP | 42.67 | 5501.04 | NPP |
| | 04/11/11 | 5543.71 | 45.50 | NPP | 42.58 | 5501.13 | NPP |
| MW-61 | 08/05/13 | 5539.41 | 10.25 | 36.80 | 37.70 | 5502.43 | 0.90 |
| | 04/08/13 | 5539.41 | 10.25 | 36.71 | 37.40 | 5502.56 | 0.69 |
| | 08/06/12 | 5539.41 | 10.25 | 36.67 | 37.25 | 5502.62 | 0.58 |
| | 04/02/12 | 5539.41 | 10.25 | 36.72 | 37.48 | 5502.54 | 0.76 |
| | 08/08/11 | 5539.41 | 10.25 | 36.67 | 37.25 | 5502.62 | 0.58 |
| | 04/11/11 | 5539.41 | 10.25 | 36.65 | 37.00 | 5502.69 | 0.35 |
| MW-62 | 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 |
| | 08/06/12 | 5561.32 | 58.25 | NPP | 56.45 | 5504.87 | NPP |
| | 04/02/12 | 5561.32 | 58.25 | NPP | 55.85 | 5505.47 | NPP |
| | 08/23/11 | 5561.32 | 58.25 | NPP | 56.26 | 5505.06 | NPP |
| | 04/11/11 | 5561.32 | 58.25 | NPP | 55.38 | 5505.94 | NPP |
| MW-63 | 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 |
| | 08/06/12 | 5547.26 | 46.00 | NPP | 45.07 | 5502.19 | NPP |
| | 04/02/12 | 5547.26 | 46.00 | NPP | 45.07 | 5502.19 | NPP |
| | 08/24/11 | 5547.26 | 46.00 | NPP | 45.00 | 5502.26 | NPP |
| | 04/11/11 | 5547.26 | 46.00 | NPP | 44.93 | 5502.33 | NPP |
| MW-64 | 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 |
| | 08/06/12 | 5552.29 | 52.25 | NPP | 50.29 | 5502.00 | NPP |
| | 04/02/12 | 5552.29 | 52.25 | NPP | 50.29 | 5502.00 | NPP |
| | 08/24/11 | 5552.29 | 52.25 | NPP | 50.22 | 5502.07 | NPP |
| | 04/11/11 | 5552.29 | 52.25 | NPP | 50.16 | 5502.13 | NPP |

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## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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)* |
|---|---|---|---|---|---|---|---|
| MW-65 | 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 |
| | 08/06/12 | 5539.62 | 44.25 | NPP | 37.04 | 5502.58 | NPP |
| | 04/02/12 | 5539.62 | 44.25 | NPP | 37.19 | 5502.43 | NPP |
| | 08/22/11 | 5539.62 | 44.25 | NPP | 37.06 | 5502.56 | NPP |
| | 04/11/11 | 5539.62 | 44.25 | NPP | 37.05 | 5502.57 | NPP |
| MW-66 | 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 |
| | 08/06/12 | 5544.62 | 43.25 | 41.95 | 42.13 | 5502.63 | 0.18 |
| | 04/02/12 | 5544.62 | 43.25 | 42.03 | 42.20 | 5502.56 | 0.17 |
| | 08/08/11 | 5544.62 | 43.25 | 41.87 | 41.92 | 5502.74 | 0.05 |
| | 04/11/11 | 5544.62 | 43.25 | 41.83 | 41.92 | 5502.77 | 0.09 |
| MW-67 | 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 |
| | 08/06/12 | 5523.31 | 25.14 | NPP | 20.93 | 5502.38 | NPP |
| | 04/02/12 | 5523.31 | 25.14 | NPP | 21.53 | 5501.78 | NPP |
| | 08/22/11 | 5523.31 | 25.14 | NPP | 21.01 | 5502.30 | NPP |
| | 04/11/11 | 5523.31 | 25.14 | NPP | 21.44 | 5501.87 | NPP |
| MW-68 | 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 |
| | 08/06/12 | 5517.37 | 20.58 | NPP | 16.63 | 5500.74 | NPP |
| | 04/02/12 | 5517.37 | 20.58 | NPP | 16.40 | 5500.97 | NPP |
| | 08/22/11 | 5517.37 | 20.58 | NPP | 16.58 | 5500.79 | NPP |
| | 04/11/11 | 5517.37 | 20.58 | NPP | 16.84 | 5500.53 | NPP |
| MW-69 | 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 |
| | 08/06/12 | 5508.51 | 12.08 | NPP | 11.93 | 5496.58 | NPP |
| | 04/02/12 | 5508.51 | 12.08 | NPP | 11.92 | 5496.59 | NPP |
| | 08/22/11 | 5508.51 | 12.08 | NPP | 11.91 | 5496.60 | NPP |
| | 04/11/11 | 5508.51 | 12.08 | NPP | NWP | NWP | NPP |

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## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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)* |
|---|---|---|---|---|---|---|---|
| P-03 | 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 |
| | 08/06/12 | 5510.77 | 22.73 | NPP | 10.91 | 5499.86 | NPP |
| | 04/02/12 | 5510.77 | 22.73 | NPP | 11.80 | 5498.97 | NPP |
| | 08/08/11 | 5510.77 | 22.73 | NPP | 11.26 | 5499.51 | NPP |
| | 04/11/11 | 5510.77 | 22.73 | NPP | 11.25 | 5499.52 | NPP |
| | | | | | | | |
| BCK-1 | 08/05/13 | 5517.8 | 79.00 | NPP | 77.28 | 5440.52 | NPP |
| | 04/08/13 | 5517.8 | 79.00 | NPP | 77.15 | 5440.65 | NPP |
| | 08/06/12 | 5517.8 | 79.00 | NPP | 77.12 | 5440.68 | NPP |
| | 04/02/12 | 5517.8 | 79.00 | NPP | 77.07 | 5440.73 | NPP |
| BCK-2 | 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 |
| | | | | | | | |
| RW-01 | 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 |
| | 08/06/12 | 5529.34 | 40.80 | NPP | 31.24 | 5498.10 | NPP |
| | 04/02/12 | 5529.34 | 40.80 | 31.64 | 31.65 | 5497.70 | 0.01 |
| | 08/08/11 | 5529.34 | 40.80 | 31.00 | 31.62 | 5498.22 | 0.62 |
| | 04/11/11 | 5529.34 | 40.80 | 32.60 | 32.97 | 5496.67 | 0.37 |
| RW-02 | 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 |
| | 08/06/12 | 5526.94 | 35.86 | NPP | 26.65 | 5500.29 | NPP |
| | 04/02/12 | 5526.94 | 35.86 | NPP | 26.70 | 5500.24 | NPP |
| | 08/08/11 | 5526.94 | 35.86 | NPP | 26.59 | 5500.35 | NPP |
| | 04/11/11 | 5526.94 | 35.86 | NPP | 28.10 | 5498.84 | NPP |
| RW-03 | 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 |
| | 08/06/12 | 5520.35 | 34.57 | Maintenance Being Conducted | | | |
| | 04/02/12 | 5520.35 | 34.57 | 22.60 | 22.65 | 5497.74 | 0.05 |
| | 08/08/11 | 5520.35 | 34.57 | 21.95 | 21.97 | 5498.40 | 0.02 |
| | 04/11/11 | 5520.35 | 34.57 | NPP | 22.43 | 5497.92 | NPP |

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## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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)* |
|---|---|---|---|---|---|---|---|
| RW-09 | 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 |
| | 08/06/12 | 5523.21 | 34.04 | NPP | 25.05 | 5498.16 | NPP |
| | 04/02/12 | 5523.21 | 34.04 | NPP | 25.10 | 5498.11 | NPP |
| | 08/08/11 | 5523.21 | 34.04 | 24.00 | 24.01 | 5499.21 | 0.01 |
| | 04/11/11 | 5523.21 | 34.04 | NPP | 28.35 | 5494.86 | NPP |
| RW-14 | 08/05/13 | 5537.5 | 41.94 | NPP | 35.29 | 5502.21 | NPP |
| | 04/08/13 | 5537.5 | 41.94 | NPP | 35.30 | 5502.20 | NPP |
| | 08/06/12 | 5537.5 | 41.94 | 35.13 | 35.18 | 5502.36 | 0.05 |
| | 04/02/12 | 5537.5 | 41.94 | 35.28 | 36.12 | 5502.05 | 0.84 |
| | 08/08/11 | 5537.5 | 41.94 | 35.02 | 36.14 | 5502.26 | 1.12 |
| | 04/11/11 | 5537.5 | 41.94 | 36.77 | 36.97 | 5500.69 | 0.20 |
| RW-15 | 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 |
| | 08/06/12 | 5536.83 | 43.43 | NPP | 34.98 | 5501.85 | NPP |
| | 04/02/12 | 5536.83 | 43.43 | NPP | 35.17 | 5501.66 | NPP |
| | 08/08/11 | 5536.83 | 43.43 | NPP | 34.95 | 5501.88 | NPP |
| | 04/11/11 | 5536.83 | 43.43 | NPP | 37.23 | 5499.60 | NPP |
| RW-16 | 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 |
| | 08/06/12 | 5535.45 | 41.48 | 34.02 | 34.18 | 5501.40 | 0.16 |
| | 04/02/12 | 5535.45 | 41.48 | NPP | 34.18 | 5501.27 | NPP |
| | 08/08/11 | 5535.45 | 41.48 | 34.01 | 34.32 | 5501.38 | 0.31 |
| | 04/11/11 | 5535.45 | 41.48 | NPP | 38.59 | 5496.86 | NPP |
| RW-17 | 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 |
| | 08/06/12 | 5533.84 | 41.89 | NPP | 33.20 | 5500.64 | NPP |
| | 04/02/12 | 5533.84 | 41.89 | NPP | 33.25 | 5500.59 | NPP |
| | 08/08/11 | 5533.84 | 41.89 | NPP | 33.06 | 5500.78 | NPP |
| | 04/11/11 | 5533.84 | 41.89 | NPP | 32.97 | 5500.87 | NPP |
| RW-18 | 08/05/13 | 5529.38 | 37.58 | 31.63 | 31.64 | 5497.75 | 0.01 |
| | 04/08/13 | 5529.38 | 37.58 | NPP | 30.18 | 5499.20 | NPP |
| | 08/06/12 | 5529.38 | 37.58 | NPP | 30.69 | 5498.69 | NPP |
| | 04/02/12 | 5529.38 | 37.58 | NPP | 28.05 | 5501.33 | NPP |
| | 08/08/11 | 5529.38 | 37.58 | NPP | 35.43 | 5493.95 | NPP |
| | 04/11/11 | 5529.38 | 37.58 | NPP | 35.41 | 5493.97 | NPP |
| RW-19 | 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 |
| | 08/06/12 | 5530.51 | 36.64 | NPP | 30.40 | 5500.11 | NPP |
| | 04/02/12 | 5530.51 | 36.64 | NPP | 30.45 | 5500.06 | NPP |
| | 08/08/11 | 5530.51 | 36.64 | NPP | 30.29 | 5500.22 | NPP |
| | 04/11/11 | 5530.51 | 36.64 | NPP | 30.67 | 5499.84 | NPP |
| RW-22 | 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 |
| | 08/06/12 | 5524.44 | 35.60 | NPP | 26.03 | 5498.41 | NPP |
| | 04/02/12 | 5524.44 | 35.60 | NPP | 26.03 | 5498.41 | NPP |
| | 08/08/11 | 5524.44 | 35.60 | NPP | 26.01 | 5498.43 | NPP |
| | 04/11/11 | 5524.44 | 35.60 | 27.87 | 29.44 | 5496.26 | 1.57 |

# TABLE 1
## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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)* |
|---|---|---|---|---|---|---|---|
| RW-23 | 08/05/13 | 5521.38 | 35.53 | 23.14 | 23.15 | 5498.24 | 0.01 |
| | 04/08/13 | 5521.38 | 35.53 | NPP | 23.30 | 5498.08 | NPP |
| | 08/06/12 | 5521.38 | 35.53 | 23.17 | 23.20 | 5498.20 | 0.03 |
| | 04/02/12 | 5521.38 | 35.53 | NPP | 23.43 | 5497.95 | NPP |
| | 08/08/11 | 5521.38 | 35.53 | 23.34 | 23.35 | 5498.04 | 0.01 |
| | 04/11/11 | 5521.38 | 35.53 | NPP | 30.50 | 5490.88 | NPP |
| RW-28 | 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 |
| | 08/06/12 | 5527.93 | 36.99 | 29.64 | 30.62 | 5498.09 | 0.98 |
| | 04/02/12 | 5527.93 | 36.99 | 29.74 | 29.87 | 5498.16 | 0.13 |
| | 08/08/11 | 5527.93 | 36.99 | 29.40 | 29.65 | 5498.48 | 0.25 |
| | 04/11/11 | 5527.93 | 36.99 | 29.30 | 29.55 | 5498.58 | 0.25 |
| RW-42 | 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 |
| | 08/06/12 | 5527.48 | 32.02 | 27.77 | 27.98 | 5499.67 | 0.21 |
| | 04/02/12 | 5527.48 | 32.02 | 27.35 | 28.20 | 5499.96 | 0.85 |
| | 08/08/11 | 5527.48 | 32.02 | 27.15 | 28.05 | 5500.15 | 0.90 |
| | 04/11/11 | 5527.48 | 32.02 | 27.05 | 27.70 | 5500.30 | 0.65 |
| RW-43 | 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 |
| | 08/06/12 | 5520.02 | 24.03 | 21.72 | 22.02 | 5498.24 | 0.30 |
| | 04/02/12 | 5520.02 | 24.03 | 21.00 | 21.87 | 5498.85 | 0.87 |
| | 08/08/11 | 5520.02 | 24.03 | 21.65 | 21.70 | 5498.36 | 0.05 |
| | 04/11/11 | 5520.02 | 24.03 | 20.61 | 20.68 | 5499.40 | 0.07 |
| | | | | | | | |
| OW 0+60 | 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 |
| | 08/06/12 | 5506.62 | 12.26 | NPP | 12.00 | 5494.62 | NPP |
| | 04/02/12 | 5506.62 | 12.26 | NPP | NWP | NWP | NPP |
| | 08/15/11 | 5506.62 | 12.26 | NPP | 12.03 | 5494.59 | NPP |
| | 04/11/11 | 5506.62 | 12.26 | NPP | 12.25 | 5494.37 | NPP |
| OW 1+50 | 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 |
| | 08/06/12 | 5508.03 | 14.36 | 14.16 | 14.36 | 5493.83 | 0.20 |
| | 04/02/12 | 5508.03 | 14.36 | 14.14 | 14.36 | 5493.85 | 0.22 |
| | 08/15/11 | 5508.03 | 14.36 | 14.28 | 14.36 | 5493.73 | 0.08 |
| | 04/11/11 | 5508.03 | 14.36 | 14.10 | 14.32 | 5493.89 | 0.22 |
| OW 3+85 | 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 |
| | 08/06/12 | 5507.31 | 15.06 | 13.84 | 13.85 | 5493.47 | 0.01 |
| | 04/02/12 | 5507.31 | 15.06 | NPP | NWP | NWP | NPP |
| | 08/15/11 | 5507.31 | 15.06 | 13.77 | 13.78 | 5493.54 | 0.01 |
| | 04/11/11 | 5507.31 | 15.06 | 13.68 | 13.69 | 5493.63 | 0.01 |
| OW 5+50 | 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 |
| | 08/06/12 | 5507.59 | 13.67 | NPP | 13.64 | 5493.95 | NPP |
| | 04/02/12 | 5507.59 | 13.67 | NPP | 13.66 | 5493.93 | NPP |
| | 08/15/11 | 5507.59 | 13.67 | NPP | 13.63 | 5493.96 | NPP |
| | 04/11/11 | 5507.59 | 13.67 | NPP | 13.66 | 5493.93 | NPP |

# TABLE 1
## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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)* |
|---|---|---|---|---|---|---|---|
| OW 6+70 | 08/05/13 | 5504.78 | 14.67 | NPP | NWP | NWP | NPP |
| | 04/08/13 | 5504.78 | 14.67 | NPP | NWP | NWP | NPP |
| | 08/06/12 | 5504.78 | 14.67 | NPP | NWP | NWP | NPP |
| | 04/02/12 | 5504.78 | 14.67 | NPP | NWP | NWP | NPP |
| | 08/15/11 | 5504.78 | 14.67 | NPP | NWP | NWP | NPP |
| | 04/11/11 | 5504.78 | 14.67 | NPP | NWP | NWP | NPP |
| OW 8+10 | 08/05/13 | 5506.53 | 15.99 | NPP | NWP | NWP | NPP |
| | 04/08/13 | 5506.53 | 15.99 | NPP | NWP | NWP | NPP |
| | 08/06/12 | 5506.53 | 15.99 | NPP | NWP | NWP | NPP |
| | 04/02/12 | 5506.53 | 15.99 | NPP | NWP | NWP | NPP |
| | 04/08/13 | 5506.53 | 15.99 | NPP | NWP | NWP | NPP |
| | 04/11/11 | 5506.53 | 15.99 | NPP | NWP | NWP | NPP |
| OW 11+15 | 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 |
| | 08/06/12 | 5506.70 | 16.59 | 12.66 | 12.67 | 5494.04 | 0.01 |
| | 04/02/12 | 5506.70 | 16.59 | 12.70 | 12.71 | 5494.00 | 0.01 |
| | 08/15/11 | 5506.70 | 16.59 | NPP | 12.55 | 5494.15 | NPP |
| | 04/11/11 | 5506.70 | 16.59 | 12.67 | 12.68 | 5494.03 | 0.01 |
| OW 14+10 | 08/05/13 | 5508.14 | 12.96 | NPP | NWP | NWP | NPP |
| | 04/08/13 | 5508.14 | 12.96 | NPP | NWP | NWP | NPP |
| | 08/06/12 | 5508.14 | 12.96 | NPP | NWP | NWP | NPP |
| | 04/02/12 | 5508.14 | 12.96 | NPP | NWP | NWP | NPP |
| | 08/15/11 | 5508.14 | 12.96 | NPP | NWP | NWP | NPP |
| | 04/11/11 | 5508.14 | 12.96 | NPP | NWP | NWP | NPP |
| OW 16+60 | 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 |
| | 08/06/12 | 5508.43 | 15.21 | NPP | 13.12 | 5495.31 | NPP |
| | 04/02/12 | 5508.43 | 15.21 | NPP | 12.99 | 5495.44 | NPP |
| | 08/15/11 | 5508.43 | 15.21 | NPP | 13.14 | 5495.29 | NPP |
| | 04/11/11 | 5508.43 | 15.21 | NPP | 12.92 | 5495.51 | NPP |
| OW 19+50 | 08/05/13 | 5508.03 | 13.00 | NPP | NWP | NWP | NPP |
| | 04/08/13 | 5508.03 | 13.00 | NPP | NWP | NWP | NPP |
| | 08/06/12 | 5508.03 | 13.00 | NPP | NWP | NWP | NPP |
| | 04/02/12 | 5508.03 | 13.00 | NPP | NWP | NWP | NPP |
| | 08/15/11 | 5508.03 | 13.00 | NPP | NWP | NWP | NPP |
| | 04/11/11 | 5508.03 | 13.00 | NPP | 12.66 | 5495.37 | NPP |
| OW 22+00 | 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 |
| | 08/06/12 | 5506.91 | 14.16 | NPP | 13.41 | 5493.50 | NPP |
| | 04/02/12 | 5506.91 | 14.16 | NPP | 12.26 | 5494.65 | NPP |
| | 08/15/11 | 5506.91 | 14.16 | NPP | 13.06 | 5493.85 | NPP |
| | 04/11/11 | 5506.91 | 14.16 | NPP | 11.92 | 5494.99 | NPP |
| OW 23+10 | 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 |
| | 08/06/12 | 5514.12 | 18.34 | NPP | 16.58 | 5497.54 | NPP |
| | 04/02/12 | 5514.12 | 18.34 | NPP | 16.43 | 5497.69 | NPP |
| | 08/15/11 | 5514.12 | 18.34 | NPP | 16.41 | 5497.71 | NPP |
| | 04/11/11 | 5514.12 | 18.34 | NPP | 16.37 | 5497.75 | NPP |

# TABLE 1
## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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) |
|---|---|---|---|---|---|---|---|
| OW 23+90 | 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 |
| | 08/06/12 | 5515.18 | 18.01 | NPP | 17.41 | 5497.77 | NPP |
| | 04/02/12 | 5515.18 | 18.01 | NPP | 17.23 | 5497.95 | NPP |
| | 08/15/11 | 5515.18 | 18.01 | NPP | 17.21 | 5497.97 | NPP |
| | 04/11/11 | 5515.18 | 18.01 | NPP | 17.18 | 5498.00 | NPP |
| OW 25+70 | 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 |
| | 08/06/12 | 5509.00 | 13.98 | NPP | 11.03 | 5497.97 | NPP |
| | 04/02/12 | 5509.00 | 13.98 | NPP | 10.93 | 5498.07 | NPP |
| | 08/15/11 | 5509.00 | 13.98 | NPP | 10.87 | 5498.13 | NPP |
| | 04/11/11 | 5509.00 | 13.98 | NPP | 10.84 | 5498.16 | NPP |
| CW 0+60 | 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 |
| | 08/22/12 | 5506.68 | 14.09 | NPP | 8.57 | 5498.11 | NPP |
| | 04/02/12 | 5506.68 | 14.09 | NPP | 9.27 | 5497.41 | NPP |
| | 08/15/11 | 5506.68 | 14.09 | NPP | 8.54 | 5498.14 | NPP |
| | 04/11/11 | 5506.68 | 14.09 | NPP | 9.09 | 5497.59 | NPP |
| CW 1+50 | 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 |
| | 08/22/12 | 5505.13 | 13.74 | NPP | 6.88 | 5498.25 | NPP |
| | 04/02/12 | 5505.13 | 13.74 | NPP | 7.58 | 5497.55 | NPP |
| | 08/15/11 | 5505.13 | 13.74 | NPP | 7.08 | 5498.05 | NPP |
| | 04/11/11 | 5505.13 | 13.74 | NPP | 7.54 | 5497.59 | NPP |
| CW 3+85 | 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 |
| | 08/22/12 | 5503.87 | 13.11 | NPP | 5.75 | 5498.12 | NPP |
| | 04/02/12 | 5503.87 | 13.11 | NPP | 6.21 | 5497.66 | NPP |
| | 08/15/11 | 5503.87 | 13.11 | NPP | 5.95 | 5497.92 | NPP |
| | 04/11/11 | 5503.87 | 13.11 | NPP | 6.13 | 5497.74 | NPP |
| CW 5+50 | 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 |
| | 08/22/12 | 5503.76 | 12.27 | NPP | 6.47 | 5497.29 | NPP |
| | 04/02/12 | 5503.76 | 12.27 | NPP | 6.67 | 5497.09 | NPP |
| | 08/15/11 | 5503.76 | 12.27 | NPP | 6.53 | 5497.23 | NPP |
| | 04/11/11 | 5503.76 | 12.27 | NPP | 6.61 | 5497.15 | NPP |
| CW 6+70 | 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 |
| | 08/22/12 | 5503.84 | 11.45 | NPP | 6.85 | 5496.99 | NPP |
| | 04/02/12 | 5503.84 | 11.45 | NPP | 6.96 | 5496.88 | NPP |
| | 08/15/11 | 5503.84 | 11.45 | NPP | 6.90 | 5496.94 | NPP |
| | 04/11/11 | 5503.84 | 11.45 | NPP | 6.83 | 5497.01 | NPP |
| CW 8+10 | 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 |
| | 08/22/12 | 5504.02 | 11.63 | NPP | 7.68 | 5496.34 | NPP |
| | 04/02/12 | 5504.02 | 11.63 | NPP | 7.83 | 5496.19 | NPP |
| | 08/15/11 | 5504.02 | 11.63 | NPP | 7.68 | 5496.34 | NPP |
| | 04/11/11 | 5504.02 | 11.63 | NPP | 7.84 | 5496.18 | NPP |

# TABLE 1
## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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)* |
|---|---|---|---|---|---|---|---|
| CW 8+45 | 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 |
| | 08/22/12 | 5503.80 | 12.60 | NPP | 7.76 | 5496.04 | NPP |
| | 04/02/12 | 5503.80 | 12.60 | NPP | 7.90 | 5495.90 | NPP |
| | 08/15/11 | 5503.80 | 12.60 | NPP | 7.80 | 5496.00 | NPP |
| | 04/11/11 | 5503.80 | 12.60 | NPP | 7.97 | 5495.83 | NPP |
| CW 11+15 | 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 |
| | 08/22/12 | 5503.95 | 12.27 | NPP | 6.30 | 5497.65 | NPP |
| | 04/02/12 | 5503.95 | 12.27 | NPP | 6.24 | 5497.71 | NPP |
| | 08/15/11 | 5503.95 | 12.27 | NPP | 6.18 | 5497.77 | NPP |
| | 04/11/11 | 5503.95 | 12.27 | NPP | 6.14 | 5497.81 | NPP |
| CW 14+10 | 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 |
| | 08/22/12 | 5504.39 | 13.05 | NPP | 6.30 | 5498.09 | NPP |
| | 04/02/12 | 5504.39 | 13.05 | NPP | 6.57 | 5497.82 | NPP |
| | 08/15/11 | 5504.39 | 13.05 | NPP | 6.32 | 5498.07 | NPP |
| | 04/11/11 | 5504.39 | 13.05 | NPP | 6.60 | 5497.79 | NPP |
| CW 16+60 | 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 |
| | 08/22/12 | 5504.32 | 12.86 | NPP | 6.18 | 5498.14 | NPP |
| | 04/02/12 | 5504.32 | 12.86 | NPP | 6.43 | 5497.89 | NPP |
| | 08/15/11 | 5504.32 | 12.86 | NPP | 6.12 | 5498.20 | NPP |
| | 04/11/11 | 5504.32 | 12.86 | NPP | 6.35 | 5497.97 | NPP |
| CW 19+50 | 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 |
| | 08/22/12 | 5504.52 | 9.99 | NPP | 6.12 | 5498.40 | NPP |
| | 04/02/12 | 5504.52 | 9.99 | NPP | 6.50 | 5498.02 | NPP |
| | 08/15/11 | 5504.52 | 9.99 | NPP | 6.51 | 5498.01 | NPP |
| | 04/11/11 | 5504.52 | 9.99 | NPP | 6.60 | 5497.92 | NPP |
| CW 22+00 | 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 |
| | 08/22/12 | 5508.04 | 12.34 | NPP | 8.89 | 5499.15 | NPP |
| | 04/02/12 | 5508.04 | 12.34 | NPP | 8.98 | 5499.06 | NPP |
| | 08/15/11 | 5508.04 | 12.34 | NPP | 8.90 | 5499.14 | NPP |
| | 04/11/11 | 5508.04 | 12.34 | NPP | 8.95 | 5499.09 | NPP |
| CW 23+10 | 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 |
| | 08/22/12 | 5510.04 | 14.65 | NPP | 10.52 | 5499.52 | NPP |
| | 04/02/12 | 5510.04 | 14.65 | NPP | 10.62 | 5499.42 | NPP |
| | 08/15/11 | 5510.04 | 14.65 | NPP | 10.55 | 5499.49 | NPP |
| | 04/11/11 | 5510.04 | 14.65 | NPP | 10.60 | 5499.44 | NPP |
| CW 23+90 | 08/05/13 | 5507.32 | 11.72 | NPP | 7.88 | 5499.44 | NPP |
| | 04/08/13 | 5507.32 | 11.72 | NPP | 7.99 | 5499.33 | NPP |
| | 08/22/12 | 5507.32 | 11.72 | NPP | 7.93 | 5499.39 | NPP |
| | 04/02/12 | 5507.32 | 11.72 | NPP | 8.05 | 5499.27 | NPP |
| | 08/15/11 | 5507.32 | 11.72 | NPP | 7.97 | 5499.35 | NPP |
| | 04/11/11 | 5507.32 | 11.72 | NPP | 8.10 | 5499.22 | NPP |

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## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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)* |
|---|---|---|---|---|---|---|---|
| CW 25+95 | 08/05/13 | 5505.90 | 12.25 | Active Recovery Well | | | |
| | 04/08/13 | 5505.90 | 12.25 | Active Recovery Well | | | |
| | 08/22/12 | 5505.90 | 12.25 | Active Recovery Well | | | |
| | 04/02/12 | 5505.90 | 12.25 | Active Recovery Well | | | |
| | 08/15/11 | 5505.90 | 12.25 | Active Recovery Well | | | |
| | 04/11/11 | 5505.90 | 12.25 | Active Recovery Well | | | |
| | | | | | | | |
| *SW1-0206 | 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 |
| | 08/06/12 | 5508.27 | 53.08 | NPP | 52.59 | 5455.68 | NPP |
| | 06/21/12 | 5508.27 | 53.08 | NPP | 52.59 | 5455.68 | NPP |
| | 11/16/11 | 5508.27 | 53.08 | NPP | 52.58 | 5455.69 | NPP |
| | 09/19/11 | 5508.27 | 53.08 | NPP | 52.68 | 5455.59 | NPP |
| | 08/18/11 | 5508.27 | 53.08 | NPP | 52.61 | 5455.66 | NPP |
| | 02/17/11 | 5508.27 | 53.08 | NPP | 52.58 | 5455.69 | NPP |
| | 01/31/11 | 5508.27 | 53.08 | NPP | 52.57 | 5455.70 | NPP |
| | 01/17/11 | 5508.27 | 53.08 | NPP | 52.56 | 5455.71 | NPP |
| | 01/04/11 | 5508.27 | 53.08 | NPP | 52.57 | 5455.70 | NPP |
| *SW2-0206 | 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 |
| | 08/06/12 | 5507.75 | 27.69 | NPP | 25.50 | 5482.25 | NPP |
| | 06/21/12 | 5507.75 | 27.69 | NPP | 25.56 | 5482.19 | NPP |
| | 11/16/11 | 5507.75 | 27.69 | NPP | 25.37 | 5482.38 | NPP |
| | 09/19/11 | 5507.75 | 27.69 | NPP | 25.81 | 5481.94 | NPP |
| | 08/18/11 | 5507.75 | 27.69 | NPP | 25.76 | 5481.99 | NPP |
| | 02/17/11 | 5507.75 | 27.69 | NPP | 25.98 | 5481.77 | NPP |
| | 01/31/11 | 5507.75 | 27.69 | NPP | 25.99 | 5481.76 | NPP |
| | 01/17/11 | 5507.75 | 27.69 | NPP | 26.02 | 5481.73 | NPP |
| | 01/04/11 | 5507.75 | 27.69 | NPP | 26.05 | 5481.70 | NPP |
| *SW3-0206 | 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 |
| | 08/06/12 | 5505.29 | 52.56 | NPP | 26.65 | 5478.64 | NPP |
| | 06/21/12 | 5505.29 | 52.56 | NPP | 26.80 | 5478.49 | NPP |
| | 11/16/11 | 5505.29 | 52.56 | NPP | 25.90 | 5479.39 | NPP |
| | 09/19/11 | 5505.29 | 52.56 | NPP | 26.15 | 5479.14 | NPP |
| | 08/18/11 | 5505.29 | 52.56 | NPP | 26.46 | 5478.83 | NPP |
| | 02/17/11 | 5505.29 | 52.56 | NPP | 26.20 | 5479.09 | NPP |
| | 01/31/11 | 5505.29 | 52.56 | NPP | 26.09 | 5479.20 | NPP |
| | 01/17/11 | 5505.29 | 52.56 | NPP | 26.02 | 5479.27 | NPP |
| | 01/04/11 | 5505.29 | 52.56 | NPP | 25.97 | 5479.32 | NPP |
| *SW4-0206 | 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 |
| | 08/06/12 | 5504.45 | 42.34 | NPP | 33.09 | 5471.36 | NPP |
| | 06/21/12 | 5504.45 | 42.34 | NPP | 32.85 | 5471.60 | NPP |
| | 09/19/11 | 5504.45 | 42.34 | NPP | 33.10 | 5471.35 | NPP |
| | 08/18/11 | 5504.45 | 42.34 | NPP | 33.03 | 5471.42 | NPP |
| | 02/17/11 | 5504.45 | 42.34 | NPP | 32.56 | 5471.89 | NPP |
| | 01/31/11 | 5504.45 | 42.34 | NPP | 32.56 | 5471.89 | NPP |
| | 01/17/11 | 5504.45 | 42.34 | NPP | 32.61 | 5471.84 | NPP |
| | 01/04/11 | 5504.45 | 42.34 | NPP | 32.62 | 5471.83 | NPP |

# TABLE 1
## Fluid Level Measurements Summary
## 2013 Groundwater Remediation 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) |
|---|---|---|---|---|---|---|---|
| *SW5-0206 | 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 |
| | 08/06/12 | 5514.34 | 52.24 | NPP | 35.08 | 5479.26 | NPP |
| | 06/21/12 | 5514.34 | 52.24 | NPP | 35.01 | 5479.33 | NPP |
| | 11/16/11 | 5514.34 | 52.24 | NPP | 34.56 | 5479.78 | NPP |
| | 09/19/11 | 5514.34 | 52.24 | NPP | 35.05 | 5479.29 | NPP |
| | 08/18/11 | 5514.34 | 52.24 | NPP | 35.07 | 5479.27 | NPP |
| | 02/17/11 | 5514.34 | 52.24 | NPP | 34.37 | 5479.97 | NPP |
| | 01/31/11 | 5514.34 | 52.24 | NPP | 34.35 | 5479.99 | NPP |
| | 01/17/11 | 5514.34 | 52.24 | NPP | 34.35 | 5479.99 | NPP |
| | 01/04/11 | 5514.34 | 52.24 | NPP | 34.28 | 5480.06 | NPP |
| *SW6-0206 | 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 |
| | 08/06/12 | 5519.72 | 47.41 | NPP | 42.37 | 5477.35 | NPP |
| | 06/21/12 | 5519.72 | 47.41 | NPP | 41.97 | 5477.75 | NPP |
| | 11/16/11 | 5519.72 | 47.41 | NPP | 42.23 | 5477.49 | NPP |
| | 09/19/11 | 5519.72 | 47.41 | NPP | 42.83 | 5476.89 | NPP |
| | 08/18/11 | 5519.72 | 47.41 | NPP | 42.53 | 5477.19 | NPP |
| | 02/17/11 | 5519.72 | 47.41 | NPP | 41.20 | 5478.52 | NPP |
| | 01/31/11 | 5519.72 | 47.41 | NPP | 41.26 | 5478.46 | NPP |
| | 01/17/11 | 5519.72 | 47.41 | NPP | 41.36 | 5478.36 | NPP |
| | 01/04/11 | 5519.72 | 47.41 | NPP | 42.15 | 5477.57 | NPP |
| *SW7-0206 | 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 |
| | 08/06/12 | 5517.63 | 32.95 | NPP | 20.40 | 5497.23 | NPP |
| | 06/21/12 | 5517.63 | 32.95 | NPP | 20.32 | 5497.31 | NPP |
| | 11/16/11 | 5517.63 | 32.95 | NPP | 18.73 | 5498.90 | NPP |
| | 09/19/11 | 5517.63 | 32.95 | NPP | 19.20 | 5498.43 | NPP |
| | 08/18/11 | 5517.63 | 32.95 | NPP | 19.48 | 5498.15 | NPP |
| | 02/17/11 | 5517.63 | 32.95 | NPP | 18.33 | 5499.30 | NPP |
| | 01/31/11 | 5517.63 | 32.95 | NPP | 18.09 | 5499.54 | NPP |
| | 01/17/11 | 5517.63 | 32.95 | NPP | 18.03 | 5499.60 | NPP |
| | 01/04/11 | 5517.63 | 32.95 | NPP | 18.05 | 5499.58 | NPP |

**Notes:**
*SW Wells sampled during significant rain events only
NPP = No Product Present
NWP = No Water Present

**TABLE 2**
**Groundwater Field Parameter Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| Location ID | Date | Electrical Conductivity (uS/cm) | Total Disolved Solids (mg/l) | Dissolved Oxygen (mg/l) | Oxidation Reduction Potential (mV) | pH | Temperature (°F) |
|---|---|---|---|---|---|---|---|
| **Cross-Gradient Wells** | | | | | | | |
| MW-1 | 08/13/13 | 717 | 466 | 4.13 | 61.6 | 7.42 | 61.58 |
| | 04/24/13 | 725 | 470 | 30.17 | 153.4 | 7.12 | 53.00 |
| | 08/14/12 | 717 | 468 | 2.93 | 85.8 | 7.28 | 63.40 |
| | 04/04/12 | 687 | 590 | 2.47 | 46.1 | 7.32 | 54.05 |
| | 08/13/11 | 762 | 533 | 10.80 | 240.0 | 6.80 | 68.60 |
| | 04/23/11 | 766 | 541 | 4.08 | 241.0 | 6.77 | 52.20 |
| | 08/13/10 | 841 | 588 | 1.83 | 282.0 | 7.04 | 63.60 |
| MW-13 | 08/13/13 | 3621 | 2353 | 2.52 | 98.7 | 7.03 | 63.08 |
| | 04/24/13 | 3340 | 2170 | 42.67 | 99.0 | 7.10 | 60.00 |
| | 08/14/12 | 4223 | 2745 | 2.27 | 82.7 | 7.19 | 65.10 |
| | 04/04/12 | 3491 | 2769 | 3.60 | 165.4 | 7.01 | 59.95 |
| | 08/13/11 | 3312 | 2590 | 1.87 | 252.0 | 6.80 | 61.90 |
| | 04/23/11 | 3958 | 3163 | 3.92 | 210.0 | 6.64 | 59.70 |
| | 08/13/10 | 3816 | 2977 | 1.13 | 255.0 | 6.97 | 62.90 |
| MW-26 | 08/13/13 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/14/12 | 3071 | 1996 | 1.42 | -81.0 | 7.00 | 65.70 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | 2751 | 2077 | 1.55 | 230.0 | 6.90 | 63.30 |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 2698 | 2046 | 1.32 | 300.0 | 6.83 | 64.40 |
| MW-27 | 08/13/13 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/14/12 | 5087 | 3306 | 2.79 | -23.8 | 7.27 | 64.50 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | 3741 | 2908 | 0.95 | 289.0 | 6.90 | 60.80 |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 2890 | 2211 | 1.42 | 262.0 | 6.95 | 61.70 |
| MW-32 | 08/13/13 | 4833 | 3142 | 8.73 | 87.2 | 7.55 | 58.88 |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/14/12 | 5245 | 3426 | 7.13 | 138.2 | 7.65 | 63.60 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | 4901 | 3930 | 5.42 | 189.0 | 7.10 | 59.20 |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 51 | 4148 | 6.43 | 274.0 | 6.99 | 61.30 |
| MW-33 | 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 |
| | 08/14/12 | 5609 | 3647 | 5.87 | 152.0 | 7.73 | 64.00 |
| | 04/04/12 | 4615 | 3757 | 3.57 | 119.8 | 7.42 | 57.99 |
| | 08/13/11 | 4336 | 3468 | 0.78 | 244.0 | 7.00 | 60.80 |
| | 04/23/11 | 4017 | 3202 | 2.22 | 212.0 | 6.90 | 57.40 |
| | 08/13/10 | 3794 | 2973 | 4.37 | 292.0 | 7.01 | 60.90 |
| **Downgradient Wells** | | | | | | | |
| MW-11 | 08/12/13 | 2558 | 1664 | 9.08 | -82.4 | 6.84 | 64.70 |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/14/12 | 3135 | 2039 | 1.46 | -93.2 | 6.99 | 66.10 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | 2645 | 1986 | 1.41 | 209.0 | 6.90 | 60.30 |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 2545 | 1906 | 1.98 | 254.0 | 7.03 | 66.40 |

**TABLE 2**
**Groundwater Field Parameter Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| Location ID | Date | Electrical Conductivity (uS/cm) | Total Disolved Solids (mg/l) | Dissolved Oxygen (mg/l) | Oxidation Reduction Potential (mV) | pH | Temperature (°F) |
|---|---|---|---|---|---|---|---|
| MW-12 | 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 |
| | 08/14/12 | 515 | 344 | 4.43 | 86.3 | 7.49 | 64.40 |
| | 04/04/12 | 533 | 488 | 4.66 | 24.4 | 7.65 | 49.82 |
| | 08/13/11 | 520 | 356 | 0.48 | 209.0 | 7.00 | 62.20 |
| | 04/23/11 | 1476 | 1077 | 2.58 | 245.0 | 6.94 | 51.10 |
| | 08/13/10 | 563 | 390 | 0.63 | 286.0 | 7.03 | 64.30 |
| MW-34 | 08/12/13 | 2270 | 1476 | 1.94 | -89.3 | 7.03 | 62.12 |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/14/12 | 2574 | 1672 | 1.54 | -90.2 | 7.13 | 66.50 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | 2073 | 1517 | 0.63 | 176.0 | 7.00 | 59.10 |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 1772 | 1286 | 2.91 | 233.0 | 7.12 | 63.60 |
| MW-35 | 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 |
| | 08/14/12 | 2491 | 1591 | 2.08 | -87.0 | 7.19 | 63.50 |
| | 04/04/12 | 1722 | 1427 | 1.80 | -89.4 | 7.08 | 56.71 |
| | 08/13/11 | 1921 | 1396 | 1.09 | 154.0 | 7.10 | 60.40 |
| | 04/23/11 | 1787 | 1313 | 3.10 | 237.0 | 6.93 | 57.10 |
| | 08/13/10 | 1742 | 1268 | 1.35 | 246.0 | 7.05 | 62.30 |
| MW-37 | 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 |
| | 08/14/12 | 2703 | 1760 | 3.37 | -50.2 | 7.61 | 63.10 |
| | 04/04/12 | 2043 | 1677 | 2.88 | -70.5 | 7.49 | 57.47 |
| | 08/13/11 | 2405 | 1785 | 0.59 | 209.0 | 7.10 | 60.30 |
| | 04/23/11 | 2236 | 1668 | 2.37 | 234.0 | 7.08 | 58.30 |
| | 08/13/10 | 2276 | 1686 | 0.90 | 275.0 | 6.97 | 63.30 |
| MW-38 | 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 |
| | 08/14/12 | 1577 | 1025 | 2.77 | 14.3 | 7.34 | 63.70 |
| | 04/04/12 | 1332 | 1097 | 2.86 | -83.8 | 7.29 | 57.20 |
| | 08/13/11 | 1335 | 954 | 0.56 | 223.0 | 7.00 | 59.90 |
| | 04/23/11 | 1447 | 1045 | 1.51 | 226.0 | 7.10 | 58.40 |
| | 08/13/10 | 1317 | 939 | 0.60 | 276.0 | 6.99 | 64.70 |
| **North Boundary Barrier Wells** | | | | | | | |
| CW 0+60 | 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 |
| | 08/08/12 | 904 | 585 | 2.19 | 8.9 | 7.00 | 69.30 |
| | 04/03/12 | 852 | 771 | 1.75 | -82.3 | 7.05 | 50.45 |
| | 08/15/11 | 1005 | 708 | 3.04 | 155.0 | 6.60 | 68.20 |
| | 04/13/11 | 1092 | 783 | 4.80 | 168.0 | 6.70 | 52.60 |
| | 08/07/10 | 1067 | 757 | 2.58 | 280.0 | 6.82 | 67.20 |
| | 04/07/10 | 1197 | 842 | 2.25 | 289.0 | 6.97 | 52.70 |
| CW 25+95 | 8/7/2013 | 1147 | 745 | 2.00 | -68.5 | 7.57 | 66.08 |
| | 04/24/13 | 1246 | 810 | 42.38 | -118.2 | 7.44 | 53.00 |
| | 08/08/12 | 1614 | 1053 | 0.92 | -254.1 | 7.43 | 65.50 |
| | 04/03/12 | 1236 | 1074 | 1.34 | -200.9 | 7.21 | 53.38 |
| | 08/15/11 | 1271 | 902 | 1.21 | 138.0 | 7.00 | 69.90 |
| | 04/13/11 | 1559 | 1127 | 2.58 | 63.0 | 7.06 | 60.00 |
| | 08/07/10 | 1343 | 960 | 1.09 | 141.0 | 6.96 | 66.50 |
| | 04/07/10 | 965 | 675 | 1.32 | 255.0 | 6.95 | 52.20 |

**TABLE 2**
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**2013 Groundwater Remediation Monitoring Annual Report**

| Location ID | Date | Electrical Conductivity *(uS/cm)* | Total Disolved Solids *(mg/l)* | Dissolved Oxygen *(mg/l)* | Oxidation Reduction Potential *(mV)* | pH | Temperature *(° F)* |
|---|---|---|---|---|---|---|---|
| OW 0+60 | 8/7/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/08/12 | ns | ns | ns | ns | ns | ns |
| | 04/03/12 | ns | ns | ns | ns | ns | ns |
| | 08/15/11 | ns | ns | ns | ns | ns | ns |
| | 04/13/11 | ns | ns | ns | ns | ns | ns |
| | 08/07/10 | 1469 | 1056 | 2.06 | 77.0 | 6.75 | 67.20 |
| | 04/07/10 | 1573 | 1122 | ns | ns | 6.93 | 54.90 |
| OW 1+50 | 8/7/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/08/12 | ns | ns | ns | ns | ns | ns |
| | 04/03/12 | ns | ns | ns | ns | ns | ns |
| | 08/15/11 | ns | ns | ns | ns | ns | ns |
| | 04/13/11 | ns | ns | ns | ns | ns | ns |
| | 08/07/10 | ns | ns | ns | ns | ns | ns |
| | 04/07/10 | 2720 | 2023 | ns | ns | 6.94 | 56.20 |
| OW 3+85 | 8/7/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | 3021 | 1960 | 64.23 | -112.5 | 7.15 | 52.00 |
| | 08/08/12 | ns | ns | ns | ns | ns | ns |
| | 04/03/12 | ns | ns | ns | ns | ns | ns |
| | 08/15/11 | ns | ns | ns | ns | ns | ns |
| | 04/13/11 | ns | ns | ns | ns | ns | ns |
| | 08/07/10 | 3224 | 2486 | 2.17 | 78.0 | 6.71 | 66.20 |
| | 04/07/10 | 3137 | 2371 | ns | ns | 6.94 | 54.70 |
| OW 5+50 | 8/7/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/08/12 | ns | ns | ns | ns | ns | ns |
| | 04/03/12 | ns | ns | ns | ns | ns | ns |
| | 08/15/11 | ns | ns | ns | ns | ns | ns |
| | 04/13/11 | ns | ns | ns | ns | ns | ns |
| | 08/07/10 | 3577 | 2773 | 1.90 | 114.0 | 6.76 | 69.10 |
| | 04/07/10 | ns | ns | ns | ns | ns | ns |
| OW 6+70 | 8/7/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/08/12 | ns | ns | ns | ns | ns | ns |
| | 04/03/12 | ns | ns | ns | ns | ns | ns |
| | 08/15/11 | ns | ns | ns | ns | ns | ns |
| | 04/13/11 | ns | ns | ns | ns | ns | ns |
| | 08/07/10 | ns | ns | ns | ns | ns | ns |
| | 04/07/10 | ns | ns | ns | ns | ns | ns |
| OW 8+10 | 8/7/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/08/12 | ns | ns | ns | ns | ns | ns |
| | 04/03/12 | ns | ns | ns | ns | ns | ns |
| | 08/15/11 | ns | ns | ns | ns | ns | ns |
| | 04/13/11 | ns | ns | ns | ns | ns | ns |
| | 08/07/10 | ns | ns | ns | ns | ns | ns |
| | 04/07/10 | ns | ns | ns | ns | ns | ns |
| OW 11+15 | 8/7/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/08/12 | ns | ns | ns | ns | ns | ns |
| | 04/03/12 | ns | ns | ns | ns | ns | ns |
| | 08/15/11 | 1857 | 1346 | 2.32 | 202.0 | 6.80 | 66.70 |
| | 04/13/11 | ns | ns | ns | ns | ns | ns |
| | 08/07/10 | ns | ns | ns | ns | ns | ns |
| | 04/07/10 | 1932 | 1394 | ns | ns | 6.94 | 55.80 |

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**Groundwater Field Parameter Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| Location ID | Date | Electrical Conductivity *(uS/cm)* | Total Disolved Solids *(mg/l)* | Dissolved Oxygen *(mg/l)* | Oxidation Reduction Potential *(mV)* | pH | Temperature *(° F)* |
|---|---|---|---|---|---|---|---|
| OW 14+10 | 8/7/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/08/12 | ns | ns | ns | ns | ns | ns |
| | 04/03/12 | ns | ns | ns | ns | ns | ns |
| | 08/15/11 | ns | ns | ns | ns | ns | ns |
| | 04/13/11 | ns | ns | ns | ns | ns | ns |
| | 08/07/10 | ns | ns | ns | ns | ns | ns |
| | 04/07/10 | ns | ns | ns | ns | ns | ns |
| OW 16+60 | 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 |
| | 08/08/12 | 3345 | 2150 | 2.29 | -146.6 | 7.18 | 67.70 |
| | 04/03/12 | 2389 | 1913 | 1.12 | -65.9 | 7.03 | 59.18 |
| | 08/15/11 | 2746 | 2011 | 1.41 | 184.0 | 6.90 | 70.10 |
| | 04/13/11 | 2567 | 1943 | 5.53 | 200.0 | 6.78 | 58.30 |
| | 08/07/10 | 2631 | 1982 | 2.86 | 199.0 | 6.79 | 68.50 |
| | 04/07/10 | 2601 | 1921 | ns | ns | 6.90 | 58.30 |
| OW 19+50 | 8/7/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/08/12 | ns | ns | ns | ns | ns | ns |
| | 04/03/12 | ns | ns | ns | ns | ns | ns |
| | 08/15/11 | ns | ns | ns | ns | ns | ns |
| | 04/13/11 | ns | ns | ns | ns | ns | ns |
| | 08/07/10 | 4496 | 3568 | 1.73 | 292.0 | 6.87 | 68.90 |
| | 04/07/10 | 4005 | 3129 | ns | ns | 6.92 | 54.70 |
| OW 22+00 | 8/7/2013 | 2442 | 1588 | 5.11 | 43.3 | 7.08 | 65.42 |
| | 04/24/13 | 3056 | 1990 | 57.44 | 115.6 | 7.19 | 51.00 |
| | 08/08/12 | 4262 | 2769 | 2.77 | -128.6 | 7.07 | 66.60 |
| | 04/03/12 | 3193 | 2770 | 3.22 | 74.1 | 6.97 | 53.42 |
| | 08/15/11 | 3739 | 2888 | 2.51 | 149.0 | 7.00 | 69.40 |
| | 04/13/11 | 3178 | 2468 | 2.81 | 250.0 | 6.90 | 54.30 |
| | 08/07/10 | 3804 | 2953 | 1.50 | 286.0 | 6.85 | 68.60 |
| | 04/07/10 | 3075 | 2326 | ns | ns | 6.84 | 52.40 |
| OW 23+10 | 8/7/2013 | 1283 | 834 | 2.84 | -19.8 | 7.13 | 66.68 |
| | 04/24/13 | 1498 | 1 | 46.47 | 83.8 | 7.11 | 55.00 |
| | 08/08/12 | 1995 | 1296 | 3.52 | -3.2 | 7.04 | 68.30 |
| | 04/03/12 | 1134 | 933 | 1.74 | 13.9 | 7.19 | 57.25 |
| | 08/15/11 | 1503 | 1072 | 1.32 | 128.0 | 7.00 | 69.10 |
| | 08/13/11 | 1304 | 939 | 1.89 | 192.0 | 6.98 | 57.60 |
| | 08/07/10 | 1379 | 982 | 1.06 | 272.0 | 6.90 | 69.50 |
| | 04/07/10 | 1505 | 1070 | ns | ns | 6.85 | 55.70 |
| OW 23+90 | 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 |
| | 08/08/12 | 1479 | 960 | 4.88 | -26.9 | 7.39 | 67.50 |
| | 04/03/12 | 882 | 731 | 3.64 | 40.3 | 7.56 | 56.62 |
| | 08/15/11 | 1228 | 869 | 1.77 | 151.0 | 7.00 | 69.00 |
| | 08/13/11 | 1193 | 855 | 2.73 | 203.0 | 7.03 | 58.40 |
| | 08/07/10 | 1159 | 822 | 2.05 | 238.0 | 6.97 | 67.80 |
| | 04/07/10 | 1203 | 845 | ns | ns | 6.90 | 56.10 |
| OW 25+70 | 8/7/2013 | 1309 | 852 | 2.44 | -92.1 | 7.41 | 68.66 |
| | 04/24/13 | 1335 | 1 | 42.40 | 16.5 | 7.33 | 53.00 |
| | 08/08/12 | 1349 | 875 | 2.16 | -116.2 | 7.48 | 69.40 |
| | 04/03/12 | 1254 | 1086 | 1.03 | -56.2 | 7.44 | 53.54 |
| | 08/15/11 | 781 | 544 | 1.10 | 171.0 | 7.00 | 69.30 |
| | 04/13/11 | 1160 | 830 | 1.54 | 190.0 | 7.00 | 56.05 |
| | 08/07/10 | 1199 | 850 | 0.97 | 273.0 | 6.94 | 70.40 |
| | 04/07/10 | 1100 | 773 | ns | ns | 6.90 | 51.80 |

**TABLE 2**
**Groundwater Field Parameter Summary**
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| Location ID | Date | Electrical Conductivity *(uS/cm)* | Total Disolved Solids *(mg/l)* | Dissolved Oxygen *(mg/l)* | Oxidation Reduction Potential *(mV)* | pH | Temperature *(° F)* |
|---|---|---|---|---|---|---|---|
| **Refinery Wells** | | | | | | | |
| MW-4 | 8/8/2013 | 2688 | 1746 | 1.84 | -102.5 | 7.00 | 64.04 |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | 2615 | 1701 | 1.19 | -83.6 | 6.86 | 68.30 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | 2297 | 1712 | 1.37 | 226.0 | 6.90 | 58.80 |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 2323 | 1725 | 1.49 | 266.0 | 6.94 | 64.70 |
| MW-8 | 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 |
| | 08/09/12 | 3986 | 2591 | 2.85 | 476.8 | 3.14 | 60.10 |
| | 04/04/12 | 2782 | 2219 | 2.61 | 424.7 | 2.97 | 59.58 |
| | 08/13/11 | 2306 | 1722 | 1.37 | 226.0 | 6.90 | 58.80 |
| | 04/23/11 | 2951 | 2289 | 5.30 | 251.0 | 4.79 | 55.00 |
| | 08/13/10 | 2258 | 1712 | 2.14 | 276.0 | 6.60 | 58.90 |
| MW-20 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | ns | ns | ns | ns | ns | ns |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | ns | ns | ns | ns | ns | ns |
| MW-21 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | ns | ns | ns | ns | ns | ns |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | ns | ns | ns | ns | ns | ns |
| MW-29 | 8/8/2013 | 1396 | 906 | 1.74 | 60.0 | 7.08 | 61.52 |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | 1027 | 665 | 2.11 | 173.9 | 7.07 | 61.30 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | 1116 | 797 | 2.35 | 226.0 | 7.00 | 60.10 |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 1083 | 772 | 2.02 | 289.0 | 6.78 | 60.70 |
| MW-30 | 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 |
| | 08/09/12 | 2694 | 1751 | 1.92 | -41.5 | 7.08 | 64.20 |
| | 04/04/12 | 3108 | 2395 | 2.06 | -211.8 | 6.95 | 62.24 |
| | 08/13/11 | 2986 | 2293 | 1.08 | 151.0 | 6.90 | 62.20 |
| | 04/23/11 | 3119 | 2419 | 3.65 | 129.0 | 6.50 | 59.80 |
| | 08/13/10 | 3014 | 2309 | 1.24 | 206.0 | 6.82 | 62.50 |
| MW-31 | 8/8/2013 | 1776 | 1155 | 4.79 | -120.7 | 7.15 | 63.92 |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | 3518 | 2288 | 2.25 | 33.5 | 7.19 | 66.60 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | 3359 | 2598 | 1.26 | 184.0 | 7.00 | 62.40 |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 3681 | 2857 | 0.40 | 211.0 | 6.96 | 63.80 |
| MW-40 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | 2837 | 2129 | 1.51 | 167.0 | 7.10 | 66.50 |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 2790 | 2106 | 1.00 | 281.0 | 7.00 | 68.80 |

**TABLE 2**
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| Location ID | Date | Electrical Conductivity *(uS/cm)* | Total Disolved Solids *(mg/l)* | Dissolved Oxygen *(mg/l)* | Oxidation Reduction Potential *(mV)* | pH | Temperature *(°F)* |
|---|---|---|---|---|---|---|---|
| MW-44 | 8/8/2013 | 5484 | 3564 | 3.60 | -4.3 | 7.07 | 60.98 |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | 5946 | 3865 | 5.19 | 29.3 | 7.26 | 64.20 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | 4626 | 3682 | 2.15 | 231.0 | 7.00 | 60.50 |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 5296 | 4306 | 2.57 | 320.0 | 6.78 | 60.60 |
| RW-1 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 04/11/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | ns | ns | ns | ns | ns | ns |
| RW-9 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | 3760 | 2442 | 0.98 | -144.6 | 7.00 | 62.80 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/18/11 | ns | ns | ns | ns | ns | ns |
| | 04/11/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 2925 | 2234 | 1.37 | 241.0 | 6.91 | 62.00 |
| RW-15 | 8/8/2013 | 2213 | 1439 | 1.33 | -115.1 | 6.94 | 62.24 |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | 3489 | 2269 | 0.86 | -146.2 | 7.06 | 64.20 |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/18/11 | 3130 | 2410 | 4.12 | 243.0 | 6.80 | 60.90 |
| | 04/11/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 3295 | 2540 | 0.60 | 278.0 | 7.05 | 61.90 |
| RW-18 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/18/11 | 5074 | 4098 | 3.40 | 229.0 | 6.80 | 63.80 |
| | 04/11/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 5434 | 4451 | 2.28 | 132.0 | 6.94 | 65.80 |
| RW-23 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/18/11 | ns | ns | ns | ns | ns | ns |
| | 04/11/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 1911 | 1401 | 2.20 | 241.0 | 7.00 | 64.20 |
| RW-28 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/17/11 | ns | ns | ns | ns | ns | ns |
| | 04/11/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | ns | ns | ns | ns | ns | ns |
| RW-42 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/08/11 | ns | ns | ns | ns | ns | ns |
| | 04/11/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | ns | ns | ns | ns | ns | ns |

**TABLE 2**
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| Location ID | Date | Electrical Conductivity *(uS/cm)* | Total Disolved Solids *(mg/l)* | Dissolved Oxygen *(mg/l)* | Oxidation Reduction Potential *(mV)* | pH | Temperature *(°F)* |
|---|---|---|---|---|---|---|---|
| RW-43 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/09/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/08/11 | ns | ns | ns | ns | ns | ns |
| | 04/11/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | 2647 | 1993 | 130 * | 124.0 | 6.75 | 70.00 |
| **San Juan River Bluff** | | | | | | | |
| Outfall No. 2 | 8/6/2013 | 782 | 507 | 6.48 | 57.1 | 7.51 | 63.68 |
| | 04/24/13 | 520 | 340 | 31.59 | 151.4 | 7.38 | 49.00 |
| | 08/07/12 | 324 | 211 | 4.42 | 159.9 | 7.49 | 69.90 |
| | 03/08/12 | ns | ns | ns | ns | ns | ns |
| | 08/11/11 | 299 | 204 | ns | 212.0 | 6.60 | 62.30 |
| | 04/12/11 | 826 | 588 | ns | 218.0 | 6.69 | 51.60 |
| | 08/13/10 | 388 | 271 | ns | 271.0 | 6.95 | 65.80 |
| Outfall No. 3 | 8/6/2013 | 354 | 230 | 7.55 | 87.0 | 7.53 | 60.98 |
| | 04/24/13 | 622 | 400 | 28.88 | 120.5 | 7.27 | 53.00 |
| | 08/07/12 | 295 | 191 | 6.35 | 176.5 | 7.95 | 64.20 |
| | 03/08/12 | ns | ns | ns | ns | ns | ns |
| | 08/11/11 | 301 | 206 | ns | 238.0 | 6.60 | 60.40 |
| | 04/12/11 | 466 | 325 | ns | 197.0 | 6.66 | 52.70 |
| | 08/13/10 | 317 | 219 | ns | 274.0 | 6.94 | 64.90 |
| Seep 1 | 8/6/2013 | 2472 | 1606 | 132.62 | 48.5 | 7.72 | 67.04 |
| | 04/24/13 | 3982 | 2590 | 90.94 | 228.5 | 7.36 | 46.00 |
| | 08/07/12 | 4503 | 2925 | 5.62 | 164.0 | 8.03 | 76.90 |
| | 03/18/12 | ns | ns | ns | ns | ns | ns |
| Seep 2 | 8/6/2013 | 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 |
| Seep 3 | 8/6/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | 4506 | 2930 | 99.98 | 217.0 | 7.76 | 44.00 |
| | 08/07/12 | ns | ns | ns | ns | ns | ns |
| | 03/18/12 | 3655 | 3215 | 7.95 | 127.0 | 7.89 | 52.38 |
| Seep 4 | 8/6/2013 | 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 |
| Seep 5 | 8/6/2013 | 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 |
| Seep 6 | 8/6/2013 | 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 |
| Seep 7 | 8/6/2013 | 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 |
| Seep 8 | 8/6/2013 | 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 |

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| Location ID | Date | Electrical Conductivity *(uS/cm)* | Total Disolved Solids *(mg/l)* | Dissolved Oxygen *(mg/l)* | Oxidation Reduction Potential *(mV)* | pH | Temperature *(°F)* |
|---|---|---|---|---|---|---|---|
| Seep 9 | 8/6/2013 | 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 |
| Upstream | 8/6/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | 370 | 240 | 21.89 | 168.2 | 8.20 | 49.00 |
| | 08/07/12 | 311 | 202 | 7.73 | 147.4 | 8.51 | 57.90 |
| | 03/10/12 | 236 | 218 | 10.50 | 65.4 | 8.27 | 49.28 |
| Downstream | 8/6/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | 419 | 270 | 20.80 | 193.9 | 8.20 | 51.00 |
| | 08/07/12 | 347 | 226 | 5.71 | 157.4 | 8.47 | 60.00 |
| | 03/11/12 | 323 | 273 | 10.12 | 61.2 | 8.41 | 55.40 |
| North of MW-45 | 8/6/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | 360 | 230 | 20.40 | 214.3 | 8.39 | 50.00 |
| | 08/07/12 | 313 | 203 | 8.17 | 154.8 | 8.42 | 59.10 |
| | 03/11/12 | 243 | 220 | 9.85 | 75.1 | 8.42 | 50.54 |
| North of MW-46 | 8/6/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | 368 | 240 | 20.90 | 213.5 | 8.40 | 51.00 |
| | 08/07/12 | 324 | 211 | 8.02 | 156.5 | 8.31 | 60.10 |
| | 03/10/12 | 242 | 220 | 10.20 | 65.2 | 8.37 | 50.18 |
| **Background Wells** | | | | | | | |
| MW-3 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/04/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | ns | ns | ns | ns | ns | ns |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | ns | ns | ns | ns | ns | ns |
| MW-5 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/04/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | ns | ns | ns | ns | ns | ns |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | ns | ns | ns | ns | ns | ns |
| MW-6 | 8/8/2013 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | ns | ns | ns | ns | ns | ns |
| | 08/04/12 | ns | ns | ns | ns | ns | ns |
| | 04/04/12 | ns | ns | ns | ns | ns | ns |
| | 08/13/11 | ns | ns | ns | ns | ns | ns |
| | 04/23/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | ns | ns | ns | ns | ns | ns |
| **RCRA Investigation Wells** | | | | | | | |
| MW-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 |
| MW-51 | 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 |
| MW-52 | 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 |

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| Location ID | Date | Electrical Conductivity *(uS/cm)* | Total Disolved Solids *(mg/l)* | Dissolved Oxygen *(mg/l)* | Oxidation Reduction Potential *(mV)* | pH | Temperature *(°F)* |
|---|---|---|---|---|---|---|---|
| MW-53 | 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 |
| MW-54 | 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 |
| MW-55 | 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 |
| MW-56 | 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 |
| MW-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 |
| MW-58 | 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 |
| MW-59 | 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 |
| MW-60 | 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 |
| MW-61 | 08/14/13 | ns | ns | ns | ns | ns | ns |
| | 08/15/12 | ns | ns | ns | ns | ns | ns |
| | 08/08/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | ns | ns | ns | ns | ns | ns |
| MW-62 | 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 |
| 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 |
| MW-64 | 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 |
| MW-65 | 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 |
| MW-66 | 08/14/13 | ns | ns | ns | ns | ns | ns |
| | 08/15/12 | ns | ns | ns | ns | ns | ns |
| | 08/08/11 | ns | ns | ns | ns | ns | ns |
| | 08/13/10 | ns | ns | ns | ns | ns | ns |

**TABLE 2**
**Groundwater Field Parameter Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| Location ID | Date | Electrical Conductivity *(uS/cm)* | Total Disolved Solids *(mg/l)* | Dissolved Oxygen *(mg/l)* | Oxidation Reduction Potential *(mV)* | pH | Temperature *(° F)* |
|---|---|---|---|---|---|---|---|
| MW-67 | 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 |
| MW-68 | 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 |
| MW-69 | 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 |
| | | | | | | | |
| MW BCK1 | 08/14/13 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | 5075 | 3300.00 | 88.56 | 140 | 7.28 | 59.0 |
| MW BCK2 | 08/14/13 | ns | ns | ns | ns | ns | ns |
| | 04/24/13 | 11303.33 | 7350.00 | 47.79 | 135.03 | 7.68 | 59.0 |

**Notes:**

ns = no sample

* = Field result was confirmed with field notes.

**TABLE 3**
**Refinery Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-4 | | | | | | MW-8 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 |
| **Volatile Organic Compounds (ug/L)** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 5.24E+00 | (5) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane | 6.00E+01 | (3) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 1.00E+01 | (3) | < 2.0 | < 20 | < 20 | < 20 | < 40 | < 20 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | < 2.0 | < 2.0 | < 2.0 |
| 1,1,2-Trichloroethane | 5.00E+00 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 2.50E+01 | (3) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5.00E+00 | (3) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene | - | - | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichlorobenzene | - | - | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichloropropane | 9.60E-02 | (5) | < 2.0 | < 20 | < 20 | < 20 | < 40 | < 20 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | < 2.0 | < 2.0 | < 2.0 |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,2,4-Trimethylbenzene | 1.50E+01 | (1) | 10 | 220 | 130 | 310 | 450 | 690 | 8.0 | --- | 21 | --- | 30 | --- | 56 | 95 | <1.0 |
| 1,2-Dibromo-3-chloropropane | 2.00E-01 | (2) | < 2.0 | < 20 | < 20 | < 20 | < 40 | < 20 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | < 2.0 | < 2.0 | < 2.0 |
| 1,2-Dibromoethane (EDB) | 5.00E-02 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane (EDC) | 5.00E+00 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 5.00E+00 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,3,5-Trimethylbenzene | 1.20E+01 | (1) | 2.3 | 11 | 38 | 32 | 120 | 230 | 2.0 | --- | 5.2 | --- | 13 | --- | 18 | 62 | <1.0 |
| 1,3-Dichlorobenzene | - | - | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane | 7.30E+02 | (1) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | 17 | < 40 | < 40 | < 40 | <80 | 61 | < 4.0 | --- | 23 | --- | 25 | --- | 16 | 13 | <4.0 |
| 2,2-Dichloropropane | - | - | < 2.0 | < 20 | < 20 | < 20 | < 40 | < 20 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | < 2.0 | < 2.0 | < 2.0 |
| 2-Butanone | 7.06E+03 | (5) | < 10 | < 100 | < 100 | < 100 | < 200 | < 100 | < 10 | --- | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 |
| 2-Chlorotoluene | 7.30E+02 | (1) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 2-Hexanone | - | - | < 10 | < 100 | < 100 | < 100 | < 200 | < 100 | < 10 | --- | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | 29 | 66 | 49 | 49 | <80 | 88 | < 4.0 | --- | 19 | --- | 37 | --- | 27 | 22 | <4.0 |
| 4-Chlorotoluene | 2.60E+03 | (1) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| 4-Isopropyltoluene | - | - | < 1.0 | < 10 | < 10 | < 10 | < 20 | 14 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | 1.3 | 4.7 | < 1.0 |
| 4-Methyl-2-pentanone | - | - | < 10 | < 100 | < 100 | < 100 | < 200 | < 100 | < 10 | --- | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 |
| Acetone | 2.18E+04 | (5) | < 10 | < 100 | < 100 | < 100 | < 200 | < 100 | < 10 | --- | < 10 | --- | < 10 | --- | 19 | < 10 | < 10 |
| Benzene | 5.00E+00 | (2) | 120 | 190 | 160 | 570 | 220 | 530 | < 1.0 | < 1.0 | < 1.0 | 1.3 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Bromobenzene | 2.00E+01 | (1) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Bromodichloromethane | 1.17E+00 | (5) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 8.50E+00 | (1) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 8.66E+00 | (5) | < 3.0 | < 30 | < 30 | < 30 | < 60 | < 30 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | < 3.0 | < 3.0 | < 3.0 |
| Carbon disulfide | 1.04E+03 | (5) | < 10 | < 100 | < 100 | < 100 | < 200 | < 100 | < 10 | --- | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 |
| Carbon Tetrachloride | 5.00E+00 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 1.00E+02 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Chloroethane | - | - | < 2.0 | < 20 | < 20 | < 20 | < 40 | < 20 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | < 2.0 | < 2.0 | < 2.0 |
| Chloroform | 1.00E+02 | (3) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 1.78E+01 | (5) | < 3.0 | < 30 | < 30 | < 30 | < 60 | < 30 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | < 3.0 | < 3.0 | < 3.0 |
| cis-1,2-DCE | 7.00E+01 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| cis-1,3-Dichloropropene | - | - | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Dibromochloromethane | 1.47E+00 | (5) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Dibromomethane | 3.70E+02 | (1) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane | 3.95E+02 | (5) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene | 7.00E+02 | (2) | 18 | 83 | 69 | 45 | 56 | 110 | 1.2 | 2.3 | 3.9 | 16.0 | 1.9 | 15 | 47 | 7.7 | 7.7 |
| Hexachlorobutadiene | 8.60E-01 | (1) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Isopropylbenzene | 6.79E+02 | (5) | 27 | 58 | 42 | 57 | 60 | 56 | < 1.0 | --- | 1.4 | --- | 2.4 | --- | 3.5 | 12 | <1.0 |
| Methyl tert-butyl ether (MTBE) | 1.25E+02 | (5) | 1.4 | < 10 | < 10 | < 10 | <20 | < 10 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

**TABLE 3**
**Refinery Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-4 | | | | | | MW-8 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 |
| Methylene Chloride | 5.00E+00 | (2) | < 3.0 | < 30 | < 30 | < 30 | < 60 | < 30 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | < 3.0 | < 3.0 | < 3.0 |
| Naphthalene | 1.43E+00 | (5) | 56 | 110 | 100 | 120 | 100 | 170 | < 2.0 | --- | 8.7 | --- | 20 | --- | 18 | 19 | <2.0 |
| n-Butylbenzene | - | - | < 3.0 | < 10 | < 10 | < 10 | 34 | 36 | < 3.0 | --- | 1.1 | --- | 2.3 | --- | <1.0 | <1.0 | <1.0 |
| n-Propylbenzene | - | - | 22 | 77 | 37 | 59 | 59 | 60 | 1.2 | --- | 3.6 | --- | 3.7 | --- | 6.8 | 13 | <1.0 |
| sec-Butylbenzene | - | - | 5.2 | 14 | < 10 | 10 | < 20 | 12 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | 1.4 | 3.2 | < 1.0 |
| Styrene | 1.00E+02 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| tert-Butylbenzene | - | - | 1.2 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene (PCE) | 5.00E+00 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Toluene | 7.50E+02 | (3) | < 1.0 | < 10 | < 10 | < 10 | <20 | < 10 | < 1.0 | < 1.0 | < 1.0 | 3.0 | < 1.0 | < 1.0 | 210 | < 1.0 | < 1.0 |
| trans-1,2-DCE | 1.00E+02 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 4.30E-01 | (1) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene (TCE) | 5.00E+00 | (2) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Trichlorofluoromethane | 1.29E+03 | (5) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Vinyl chloride | 1.00E+00 | (3) | < 1.0 | < 10 | < 10 | < 10 | < 20 | < 10 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 |
| Xylenes, Total | 6.20E+02 | (3) | 5.6 | 34 | 140 | 140 | 650 | 1600 | 3.6 | 8.6 | 9.3 | 56.0 | 2 | 37 | 480 | < 1.0 | < 1.0 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 1,3-Dichlorobenzene | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | --- | --- | --- | --- | < 20 | < 20 | --- | --- | --- | --- | --- | --- | --- | < 20 | < 20 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | --- | --- | --- | --- | 20 | 22 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | --- | --- | --- | --- | < 20 | < 20 | --- | --- | --- | --- | --- | --- | --- | < 20 | < 20 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 2-Chlorophenol | 1.83E+02 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | --- | --- | --- | --- | 34 | 82 | --- | --- | --- | --- | --- | --- | --- | 12 | < 10 |
| 2-Methylphenol | 1.80E+03 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 2-Nitroaniline | 1.10E+02 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 2-Nitrophenol | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 3,3´-Dichlorobenzidine | 1.50E-01 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 3+4-Methylphenol | 1.80E+02 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 3-Nitroaniline | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 4,6-Dinitro-2-methylphenol | - | - | --- | --- | --- | --- | < 20 | < 20 | --- | --- | --- | --- | --- | --- | --- | < 20 | < 20 |
| 4-Bromophenyl phenyl ether | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 4-Chloro-3-methylphenol | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 4-Chloroaniline | 3.40E-01 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 4-Chlorophenyl phenyl ether | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| 4-Nitroaniline | 3.40E+00 | (1) | --- | --- | --- | --- | < 20 | < 20 | --- | --- | --- | --- | --- | --- | --- | < 20 | < 20 |
| 4-Nitrophenol | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Acenaphthene | 2.19E+03 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Acenaphthylene | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Aniline | 1.20E+01 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Anthracene | 1.10E+04 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Azobenzene | 1.20E-01 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Benz(a)anthracene | 9.21E-01 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(a)pyrene | 2.00E-01 | (2) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(g,h,i)perylene | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |

**TABLE 3**
**Refinery Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-4 | | | | | | MW-8 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 |
| Benzoic acid | 1.50E+05 | (1) | --- | --- | --- | --- | < 20 | < 20 | --- | --- | --- | --- | --- | --- | --- | < 20 | < 20 |
| Benzyl alcohol | 1.80E+04 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | --- | --- | --- | --- | <10 | 22 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Carbazole | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Chrysene | 9.21E+01 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Dibenzofuran | - | - | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Diethyl phthalate | 2.92E+04 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Dimethyl phthalate | 3.65E+05 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Di-n-octyl phthalate | - | - | --- | --- | --- | --- | <10 | 12 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Fluoranthene | 1.46E+03 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Fluorene | 1.46E+03 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Hexachlorobenzene | 1.00E+00 | (2) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Hexachlorobutadiene | 8.60E-01 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Hexachloroethane | 3.65E+01 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Isophorone | 7.07E+02 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Naphthalene | 1.43E+00 | (5) | --- | --- | --- | --- | 48 | 96 | --- | --- | --- | --- | --- | --- | --- | 11 | < 10 |
| Nitrobenzene | 1.49E+01 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Pentachlorophenol | 1.00E+00 | (2) | --- | --- | --- | --- | < 40 | < 40 | --- | --- | --- | --- | --- | --- | --- | < 40 | < 40 |
| Phenanthrene | 1.10E+03 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Phenol | 5.00E+00 | (3) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Pyrene | 1.10E+03 | (5) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| Pyridine | 3.70E+01 | (1) | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | --- | --- | --- | < 10 | < 10 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | < 0.50 | < 0.50 | 0.21 | 0.25 | 0.29 | 0.23 | 0.67 | --- | 0.79 | --- | 0.72 | --- | 1.4 | 0.33 | 0.69 |
| Chloride | 250 | (3) | 210 | 220 | 150 | 180 | 180 | 190 | 120 | --- | 240 | --- | 190 | --- | 96 | 20 | 180 |
| Nitrite | 1 | (2) | < 0.50 | < 0.50 | 2.3* | <0.50 | <2.0 | <0.10 | 0.88 | --- | <0.10 | --- | 8.6* | --- | <2.0 | <0.10 | 0.12 |
| Bromide | - | - | 3.1 | 3.0 | 2.0 | 2.60 | 2.70 | 3.50 | 0.86 | --- | 1.0 | --- | 1.10 | --- | 0.64 | 0.23 | 1.60 |
| Nitrate | 10 | (3) | < 0.50 | < 0.50 | <0.50 | <0.50 | <0.10 | <0.10 | 13 | --- | 16 | --- | -- | --- | 0.21 | 0.50 | 24.00 |
| Phosphorus | - | - | < 2.5 | < 2.5 | <0.50 | <2.5 | <0.05 | <0.50 | < 2.5 | --- | < 10 | --- | <0.50 | --- | <0.50 | <0.50 | <0.50 |
| Sulfate | 600 | (3) | 4.0 | < 2.5 | 3.0 | 3.20 | 6.50 | 4.40 | 990 | --- | 1800 | --- | 1000 | --- | 1300 | 410 | 790 |
| Carbon Dioxide ($CO_2$) | - | - | 1100 | 1000 | 990 | 1000 | 1100 | 1000 | 61 | --- | < 1.0 | --- | 62 | --- | <5.0 | 100 | 220 |
| Alkalinity ($CaCO_3$) | - | - | 1200 | 1100 | 1100 | 1000 | 1100 | 1000 | 31 | --- | < 20 | --- | <20 | --- | <5.0 | 110 | 230 |
| Bicarbonate ($CaCO_3$) | - | - | 1200 | 1100 | 1100 | 1000 | 1100 | 1000 | 31 | --- | < 20 | --- | <20 | --- | <5.0 | 110 | 230 |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | < 0.020 | < 0.02 | 0.021 | 0.046 | <0.02 | <0.02 | < 0.020 | --- | < 0.04 | --- | 0.18 | --- | <0.02 | <0.02 | <0.02 |
| Barium | 1.0 | (3) | 2.3 | 2.3 | 1.9 | 2.7 | 2 | 1.3 | 0.021 | --- | 0.035 | --- | 0.13 | --- | 0.1 | 0.034 | <0.020 |
| Cadmium | 0.005 | (2) | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | < 0.004 | --- | 0.009 | --- | <0.002 | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | 0.034 | 0.014 | 0.066 | 0.14 | 0.0084 | <0.006 | 0.46 | --- | 4.8 | --- | 0.98 | --- | 3.7 | 0.021 | 0.0071 |
| Lead | 0.015 | (2) | 0.012 | 0.0077 | 0.0057 | 0.016 | 0.0081 | <0.005 | < 0.0010 | --- | < 0.01 | --- | 0.0086 | --- | <0.005 | <0.005 | <0.005 |
| Selenium | 0.05 | (2) | < 0.050 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.084 | --- | < 0.1 | --- | <0.05 | --- | <0.05 | <0.05 | <0.05 |
| Silver | 0.05 | (3) | < 0.025 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.025 | --- | < 0.01 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | < 0.00020 | <0.0002 | <0.0002 | <0.0008 | <0.002 | <0.0002 | 0.0012 | --- | 0.0040 | --- | 0.074 | --- | 0.0003 | <0.0002 | <0.0002 |

**TABLE 3**
**Refinery Wells Analytical Summary**
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| | | | MW-4 | | | | | | MW-8 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | **0.015** | **0.0095** | **0.0061** | <0.02 | <0.02 | <0.02 | < 0.0050 | --- | **0.011** | --- | **0.0032** | --- | <0.02 | <0.02 | <0.02 |
| Barium | 1.0 | (3) | **2.1** | **2.0** | **1.8** | **1.9** | **1.7** | **1.3** | **0.012** | --- | **0.026** | --- | **0.014** | --- | **0.025** | **0.025** | <0.02 |
| Cadmium | 0.01 | (3) | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | < 0.01 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 |
| Calcium | - | - | **150** | **160** | **130** | **150** | **130** | --- | **140** | --- | **240** | --- | **190** | --- | **200** | **150** | --- |
| Chromium | 0.05 | (3) | < 0.0060 | <0.006 | <0.006 | **<0.006** | <0.006 | <0.006 | **0.019** | --- | **3.9** | --- | **0.09** | --- | **3.2** | <0.006 | **0.007** |
| Copper | 1.0 | (3) | **0.017** | <0.006 | <0.006 | <0.006 | **0.017** | <0.006 | **0.0076** | --- | **0.17** | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 |
| Iron | 1.0 | (3) | **12** | **7.9** | **12** | **12** | **12** | **9.6** | **2.5** | --- | **60** | --- | **4.6** | --- | **34** | **0.042** | **0.082** |
| Lead | 0.05 | (3) | **0.001** | **0.0014** | <0.005 | <0.005 | <0.005 | <0.005 | < 0.0010 | --- | **0.0016** | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 |
| Magnesium | - | - | **67** | **63** | **53** | **57** | **52** | --- | **31** | --- | **48** | --- | **36** | --- | **30** | **12** | --- |
| Manganese | 0.2 | (3) | **2.8** | **3.5** | **2.6** | **3.3** | **3.2** | **3.1** | **2.7** | --- | **9.6** | --- | **2.4** | --- | **9.9** | **0.61** | **0.027** |
| Mercury | - | - | < 0.00020 | --- | --- | --- | --- | --- | < 0.00020 | --- | --- | --- | --- | --- | --- | --- | --- |
| Potassium | - | - | **6.9** | **4.2** | **3.9** | **3.6** | **5.3** | --- | **3.1** | --- | **5.4** | --- | **3.1** | --- | **3.1** | **1.9** | --- |
| Selenium | 0.05 | (3) | **0.014** | **0.0079** | 0.0063 | <0.05 | <0.05 | <0.25 | **0.04** | --- | **0.040** | --- | **0.021** | --- | <0.05 | <0.05 | <0.25 |
| Silver | 0.05 | (3) | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.0050 | --- | < 0.025 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 |
| Sodium | - | - | **370** | **330** | **340** | **310** | **380** | --- | **250** | --- | **330** | --- | **290** | --- | **260** | **50** | --- |
| Uranium | 0.03 | (3) | < 0.0010 | < 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | **0.001** | --- | **0.03** | --- | **0.0016** | --- | **0.005** | **0.001** | **0.01** |
| Zinc | 10 | (3) | < 0.010 | **0.042** | **0.25** | <0.05 | <0.05 | <0.05 | **0.076** | --- | **0.54** | --- | **0.22** | --- | **0.17** | <0.05 | **0.096** |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | **3.3** | **0.48** | **1.1** | **1.1** | **9** | **17** | <0.20 | --- | **0.27** | --- | **0.48** | --- | **0.34** | <1.0 | **0.55** |
| Gasoline Range Organics | - | - | **7.0** | **9.8** | **6.0** | **8.6** | **6.4** | <5.0 | **0.083** | --- | **0.16** | --- | **0.35** | --- | **0.34** | **3.3** | **0.14** |
| Motor Oil Range Organics | - | - | < 2.5 | < 2.5 | <2.5 | <2.5 | <5.0 | **10** | <2.5 | --- | <2.5 | --- | <2.5 | --- | <2.5 | <5.0 | <2.5 |

**Notes:**

(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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
(4) NMED TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels

- = No screening level available
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
--- = Analyte inadvertently not included in sample analysis.
--- = Analysis not required and/or well contains separate phase
= Analytical result exceeds the respective screening level.

**'Wells with product for the past two years or more are not shown on Tables. This includes RW-1, RW-18, MW-20, MW-21, RW-23, RW-28, MW-40, RW-42 and RW-43.**

RW - 1 - Product since 2009
RW - 18 - Product since 2011
RW - 23 - Product since 2010
RW - 28 - Product since 2008
RW - 42 - Product since 2008
RW - 43 - Product since 2010
MW - 20 - Product since 2008
MW - 21 - Product since 2008
MW - 40 - Product since 2011

**TABLE 3**
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| | | | RW-9 | | | | | | RW-15 | | | | | | MW-29 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| **Volatile Organic Compounds (ug/L)** | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 5.24E+00 | (5) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane | 6.00E+01 | (3) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 1.00E+01 | (3) | --- | < 40 | --- | < 100 | < 40 | --- | < 2.0 | < 40 | < 40 | < 200 | < 100 | < 40 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 1,1,2-Trichloroethane | 5.00E+00 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 2.50E+01 | (3) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5.00E+00 | (3) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene | - | - | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichlorobenzene | - | - | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichloropropane | 9.60E-02 | (5) | --- | < 40 | --- | < 100 | < 40 | --- | < 2.0 | < 40 | < 40 | < 200 | < 100 | < 40 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,4-Trimethylbenzene | 1.50E+01 | (1) | --- | **1200** | --- | **390** | **710** | --- | **14** | **700** | **1700** | **2200** | **1600** | **2900** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dibromo-3-chloropropane | 2.00E-01 | (2) | --- | < 40 | --- | < 100 | < 40 | --- | < 2.0 | < 40 | < 40 | < 200 | < 100 | < 40 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 1,2-Dibromoethane (EDB) | 5.00E-02 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane (EDC) | 5.00E+00 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 5.00E+00 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3,5-Trimethylbenzene | 1.20E+01 | (1) | --- | **250** | --- | **56** | **110** | --- | **1.0** | **190** | **510** | **670** | **430** | **680** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichlorobenzene | - | - | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane | 7.30E+02 | (1) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | --- | **130** | --- | < 200 | <80 | --- | < 4.0 | < 80 | **110** | < 400 | < 200 | **92** | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| 2,2-Dichloropropane | - | - | --- | < 40 | --- | < 100 | < 40 | --- | < 2.0 | < 40 | < 40 | < 200 | < 100 | < 40 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 2-Butanone | 7.06E+03 | (5) | --- | < 200 | --- | < 500 | < 200 | --- | < 10 | < 200 | < 200 | < 1000 | < 500 | < 200 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Chlorotoluene | 7.30E+02 | (1) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Hexanone | - | - | --- | < 200 | --- | < 500 | < 200 | --- | < 10 | < 200 | < 200 | < 1000 | < 500 | < 200 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | --- | **190** | --- | <200 | <80 | --- | < 4.0 | **85** | **170** | <100 | <200 | **150** | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| 4-Chlorotoluene | 2.60E+03 | (1) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 4-Isopropyltoluene | - | - | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 4-Methyl-2-pentanone | - | - | --- | < 200 | --- | < 500 | < 200 | --- | < 10 | < 200 | < 200 | < 1000 | < 500 | < 200 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Acetone | 2.18E+04 | (5) | --- | < 200 | --- | < 500 | < 200 | --- | < 10 | < 200 | < 200 | < 1000 | < 500 | < 200 | < 10 | < 10 | < 10 | **14** | < 10 | < 10 |
| Benzene | 5.00E+00 | (2) | --- | **5400** | --- | **3900** | **9500** | --- | **30** | **1100** | **2800** | **4300** | **3000** | **6000** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromobenzene | 2.00E+01 | (1) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromodichloromethane | 1.17E+00 | (5) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 8.50E+00 | (1) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 8.66E+00 | (5) | --- | < 60 | --- | < 150 | < 60 | --- | < 3.0 | < 60 | < 60 | < 300 | < 150 | < 60 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Carbon disulfide | 1.04E+03 | (5) | --- | < 200 | --- | < 500 | < 200 | --- | < 10 | < 200 | < 200 | < 1000 | < 500 | < 200 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Carbon Tetrachloride | 5.00E+00 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 1.00E+02 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroethane | - | - | --- | < 40 | --- | < 100 | < 40 | --- | < 2.0 | < 40 | < 40 | < 200 | < 100 | < 40 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Chloroform | 1.00E+02 | (3) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 1.78E+01 | (5) | --- | < 60 | --- | < 150 | < 60 | --- | < 3.0 | < 60 | < 60 | < 300 | < 150 | < 60 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| cis-1,2-DCE | 7.00E+01 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,3-Dichloropropene | - | - | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromochloromethane | 1.47E+00 | (5) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromomethane | 3.70E+02 | (1) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane | 3.95E+02 | (5) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene | 7.00E+02 | (2) | --- | **670** | --- | **370** | **890** | --- | **19** | **1000** | **2500** | **3600** | **2500** | **4100** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Hexachlorobutadiene | 8.60E-01 | (1) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Isopropylbenzene | 6.79E+02 | (5) | --- | **46** | --- | <20 | **67** | --- | < 1.0 | **24** | **80** | <100 | **64** | **150** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl tert-butyl ether (MTBE) | 1.25E+02 | (5) | --- | **6400** | --- | < 50 | **3400** | --- | **1.6** | **93** | **71** | <100 | < 50 | **30** | < 1.0 | < 1.0 | **1.2** | <1.0 | <1.0 | **1.0** |

**TABLE 3**
**Refinery Wells Analytical Summary**
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| | | | RW-9 | | | | | | RW-15 | | | | | | MW-29 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| Methylene Chloride | 5.00E+00 | (2) | --- | < 60 | --- | < 150 | < 60 | --- | < 3.0 | < 60 | < 60 | < 300 | < 150 | < 60 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Naphthalene | 1.43E+00 | (5) | --- | **250** | --- | <100 | **110** | --- | **3.1** | **160** | **470** | **590** | **380** | **620** | < 2.0 | < 1.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| n-Butylbenzene | - | - | --- | < 20 | --- | < 50 | <20 | --- | < 3.0 | < 20 | **25** | <100 | < 50 | **73** | < 3.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| n-Propylbenzene | - | - | --- | **99** | --- | <50 | **88** | --- | **1.7** | **97** | **270** | **370** | **230** | **390** | < 1.0 | < 2.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| sec-Butylbenzene | - | - | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | **17** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Styrene | 1.00E+02 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| tert-Butylbenzene | - | - | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene (PCE) | 5.00E+00 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | 7.50E+02 | (3) | --- | < 20 | --- | <50 | <20 | --- | **1.5** | < 20 | **790** | <100 | **2000** | **1000** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-DCE | 1.00E+02 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 4.30E-01 | (1) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene (TCE) | 5.00E+00 | (2) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorofluoromethane | 1.29E+03 | (5) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vinyl chloride | 1.00E+00 | (3) | --- | < 20 | --- | < 50 | < 20 | --- | < 1.0 | < 20 | < 20 | < 100 | < 50 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Xylenes, Total | 6.20E+02 | (3) | --- | **1800** | --- | **550** | **2200** | --- | **8.3** | **2100** | **9700** | **16000** | **11000** | **21000** | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 1,3-Dichlorobenzene | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | --- | --- | --- | --- | <100 | --- | --- | --- | --- | --- | < 20 | < 20 | --- | --- | --- | --- | < 20 | < 20 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | **13** | **13** | --- | --- | --- | --- | < 10 | < 10 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | --- | --- | --- | --- | <100 | --- | --- | --- | --- | --- | < 20 | < 20 | --- | --- | --- | --- | < 20 | < 20 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Chlorophenol | 1.83E+02 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | --- | --- | --- | --- | <50 | --- | --- | --- | --- | --- | **88** | **79** | --- | --- | --- | --- | < 10 | < 10 |
| 2-Methylphenol | 1.80E+03 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | **12** | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Nitroaniline | 1.10E+02 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Nitrophenol | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 3,3´-Dichlorobenzidine | 1.50E-01 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 3+4-Methylphenol | 1.80E+02 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | **11** | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 3-Nitroaniline | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 4,6-Dinitro-2-methylphenol | - | - | --- | --- | --- | --- | <100 | --- | --- | --- | --- | --- | < 20 | < 20 | --- | --- | --- | --- | < 20 | < 20 |
| 4-Bromophenyl phenyl ether | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 4-Chloro-3-methylphenol | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 4-Chloroaniline | 3.40E-01 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 4-Chlorophenyl phenyl ether | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| 4-Nitroaniline | 3.40E+00 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 20 | < 20 | --- | --- | --- | --- | < 20 | < 20 |
| 4-Nitrophenol | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Acenaphthene | 2.19E+03 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Acenaphthylene | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Aniline | 1.20E+01 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Anthracene | 1.10E+04 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Azobenzene | 1.20E-01 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Benz(a)anthracene | 9.21E-01 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(a)pyrene | 2.00E-01 | (2) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(g,h,i)perylene | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |

**TABLE 3**
**Refinery Wells Analytical Summary**
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| | | | RW-9 | | | | | | RW-15 | | | | | | MW-29 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| Benzoic acid | 1.50E+05 | (1) | --- | --- | --- | --- | <100 | --- | --- | --- | --- | --- | < 20 | < 20 | --- | --- | --- | --- | < 20 | < 20 |
| Benzyl alcohol | 1.80E+04 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Carbazole | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Chrysene | 9.21E+01 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Dibenzofuran | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Diethyl phthalate | 2.92E+04 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Dimethyl phthalate | 3.65E+05 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Di-n-octyl phthalate | - | - | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Fluoranthene | 1.46E+03 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Fluorene | 1.46E+03 | (5) | --- | --- | --- | --- | <50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Hexachlorobenzene | 1.00E+00 | (2) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Hexachlorobutadiene | 8.60E-01 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Hexachloroethane | 3.65E+01 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Isophorone | 7.07E+02 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Naphthalene | 1.43E+00 | (5) | --- | --- | --- | --- | **74** | --- | --- | --- | --- | --- | **310** | **280** | --- | --- | --- | --- | < 10 | < 10 |
| Nitrobenzene | 1.49E+01 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Pentachlorophenol | 1.00E+00 | (2) | --- | --- | --- | --- | <200 | --- | --- | --- | --- | --- | < 40 | < 40 | --- | --- | --- | --- | < 40 | < 40 |
| Phenanthrene | 1.10E+03 | (5) | --- | --- | --- | --- | <50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Phenol | 5.00E+00 | (3) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | **12** | **18** | --- | --- | --- | --- | < 10 | < 10 |
| Pyrene | 1.10E+03 | (5) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| Pyridine | 3.70E+01 | (1) | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | --- | < 10 | < 10 | --- | --- | --- | --- | < 10 | < 10 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 0.50 | < 0.50 | <0.5 | **0.25** | <0.10 | **0.29** | **0.26** | 0.32 | <0.5 | **0.33** | **0.4** | **0.36** |
| Chloride | 250 | (3) | --- | **460** | --- | **230** | **160** | --- | **360** | **440** | **380** | **470** | **460** | **420** | **110** | **44** | **79** | **69** | **52** | **57** |
| Nitrite | 1 | (2) | --- | < 2.0 * | --- | <1.0 | <1.0 | --- | < 0.50 | < 0.50 | <0.50 | <2.0 | <0.10 | <2.0 | < 0.10 | < 0.10 | ***2.5** | <0.10 | <0.10 | <0.10 |
| Bromide | - | - | --- | **5.6** | --- | **4.90** | **4.50** | --- | **6.8** | **7.4** | **7.70** | **7.80** | **1.60** | **7.80** | **0.64** | **0.28** | <0.5 | **0.43** | **0.45** | **0.40** |
| Nitrate | 10 | (3) | --- | < 2.0 * | --- | <1.0 | <1.0 | --- | < 0.50 | < 0.50 | <0.50 | **0.33** | <0.10 | <0.10 | **7.2** | **0.59** | --- | **1.90** | **0.93** | **0.99** |
| Phosphorus | - | - | --- | < 5.0 | --- | <5.0 | <5.0 | --- | < 2.5 | < 2.5 | <2.5 | <0.50 | <0.50 | <0.50 | < 0.50 | < 0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Sulfate | 600 | (3) | --- | **21** | --- | **6.30** | **280.00** | --- | < 2.5 | < 2.5 | **2.90** | <0.50 | **1.30** | **0.76** | **290** | **160** | **210** | **210** | **160** | **160** |
| Carbon Dioxide ($CO_2$) | - | - | --- | **1200** | --- | **1300** | **920** | --- | **1100** | **1000** | **1100** | **1200** | **980** | **1200** | **240** | **230** | **230** | **240** | **190** | **200** |
| Alkalinity ($CaCO_3$) | - | - | --- | **1200** | --- | **1300** | **1000** | --- | **1200** | **1100** | **1200** | **1200** | **1100** | **1200** | **260** | **250** | **260** | **240** | **210** | **210** |
| Bicarbonate ($CaCO_3$) | - | - | --- | **1200** | --- | **1300** | **1000** | --- | **1200** | **1100** | **1200** | **1200** | **1100** | **1200** | **260** | **250** | **260** | **240** | **210** | **210** |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | --- | <0.02 | --- | <0.02 | <0.02 | --- | < 0.020 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | < 0.020 | < 0.020 | <0.02 | <0.02 | <0.02 | <0.02 |
| Barium | 1.0 | (3) | --- | **4.5** | --- | **3.3** | **0.23** | --- | **0.98** | **1.2** | **1.8** | **1.6** | **1.7** | **1.2** | **0.14** | **0.070** | **0.034** | **0.054** | **0.028** | **0.072** |
| Cadmium | 0.005 | (2) | --- | <0.002 | --- | <0.002 | <0.002 | --- | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | --- | **0.0097** | --- | 0.007 | <0.006 | --- | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Lead | 0.015 | (2) | --- | **0.041** | --- | **0.012** | <0.005 | --- | < 0.0010 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | **0.0037** | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Selenium | 0.05 | (2) | --- | <0.05 | --- | <0.05 | <0.25 | --- | < 0.050 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 | <0.05 | <0.25 |
| Silver | 0.05 | (3) | --- | <0.005 | --- | <0.005 | <0.005 | --- | < 0.025 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.025 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | --- | <0.0002 | --- | <0.0008 | <0.0002 | --- | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.001 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |

**TABLE 3**
**Refinery Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | RW-9 | | | | | | RW-15 | | | | | | MW-29 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | --- | 0.02 | --- | <0.02 | <0.02 | --- | < 0.010 | 0.0074 | 0.011 | <0.02 | <0.02 | <0.02 | < 0.0050 | 0.0013 | 0.0015 | <0.02 | <0.02 | <0.02 |
| Barium | 1.0 | (3) | --- | 3.8 | --- | 3.2 | 0.25 | --- | 1.1 | 1.1 | 1.3 | 1.5 | 1.5 | 1.2 | 0.037 | 0.02 | 0.026 | 0.027 | <0.02 | <0.02 |
| Cadmium | 0.01 | (3) | --- | <0.002 | --- | <0.002 | <0.002 | --- | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | < 0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Calcium | - | - | --- | 230 | --- | 160 | 140 | --- | 140 | 130 | 79 | 160 | 150 | 130 | 130 | 69 | 82 | 90 | 53 | --- |
| Chromium | 0.05 | (3) | --- | 0.007 | --- | <0.006 | <0.006 | --- | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | < 0.0060 | < 0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Copper | 1.0 | (3) | --- | <0.006 | --- | <0.006 | <0.006 | --- | 0.014 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | < 0.0050 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Iron | 1.0 | (3) | --- | 43 | --- | 1.5 | 2.3 | --- | 9.0 | 11 | 18 | 14 | 7.2 | 5.3 | < 0.020 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Lead | 0.05 | (3) | --- | 0.014 | --- | <0.005 | 0.007 | --- | < 0.0010 | < 0.001 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.0010 | < 0.001 | <0.005 | <0.005 | <0.005 | <0.005 |
| Magnesium | - | - | --- | 71 | --- | 54 | 39 | --- | 43 | 46 | 48 | 54 | 51 | 44 | 30 | 16 | 20 | 23 | 14 | --- |
| Manganese | 0.2 | (3) | --- | 5.6 | --- | 2.1 | 2.2 | --- | 1.5 | 1.4 | 1.2 | 2.3 | 4 | 2.8 | 2.3 | 1.2 | 1.4 | 1.6 | 0.87 | 0.97 |
| Mercury | - | - | --- | --- | --- | --- | --- | --- | < 0.00020 | --- | --- | --- | --- | --- | < 0.00020 | --- | --- | --- | --- | --- |
| Potassium | - | - | --- | 4.9 | --- | 4.6 | 2.9 | --- | 4.6 | 4.9 | 6.5 | 4.6 | 3.6 | 3.7 | 3.5 | 2.8 | 2.7 | 2.5 | 2.2 | NS[3] |
| Selenium | 0.05 | (3) | --- | 0.013 | --- | <0.05 | <0.05 | --- | 0.026 | 0.015 | 0.024 | <0.05 | <0.05 | <0.25 | < 0.0050 | 0.0023 | 0.0026 | <0.05 | <0.05 | <0.25 |
| Silver | 0.05 | (3) | --- | <0.005 | --- | <0.005 | <0.005 | --- | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.0050 | < 0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Sodium | - | - | --- | 450 | --- | 520 | 450 | --- | 530 | 550 | 600 | 590 | 580 | 550 | 130 | 120 | 130 | 120 | 110 | --- |
| Uranium | 0.03 | (3) | --- | <0.001 | --- | <0.001 | <0.001 | --- | < 0.0010 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.004 | 0.0022 | 0.0026 | 0.002 | 0.0017 | 0.002 |
| Zinc | 10 | (3) | --- | 0.14 | --- | <0.05 | <0.05 | --- | < 0.010 | 0.076 | 0.052 | <0.05 | <0.05 | 0.054 | < 0.010 | 0.08 | 0.15 | <0.05 | <0.05 | 0.059 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | --- | 14.0 | --- | 8.8 | 14 | --- | 3.5 | 2.1 | 1.8 | 5.7 | 9.4 | 48 | < 0.20 | < 0.20 | <0.20 | <0.20 | <0.20 | <0.20 |
| Gasoline Range Organics | - | - | --- | 23 | --- | 21 | 47 | --- | 2.0 | 10 | 47 | 69 | 90 | 70 | < 0.050 | < 0.050 | <0.05 | <0.05 | <0.05 | <0.05 |
| Motor Oil Range Organics | - | - | --- | < 2.5 | --- | <2.5 | <5.0 | --- | < 2.5 | < 2.5 | <2.5 | <2.5 | <5.0 | <50 | < 2.5 | < 2.5 | <2.5 | <2.5 | <2.5 | <2.5 |

**'Wells with product for the past two years or more are not shown on Tables. This includes RW-1, RW-18, MW-20, MW-21, RW-23, RW-28, MW-40, RW-42 and RW-43.**

RW - 1 - Product since 2009
RW - 18 - Product since 2011
RW - 23 - Product since 2010
RW - 28 - Product since 2008
RW - 42 - Product since 2008
RW - 43 - Product since 2010
MW - 20 - Product since 2008
MW - 21 - Product since 2008
MW - 40 - Product since 2011

**Notes:**

(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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
(4) NMED TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels

- = No screening level available
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
--- = Analyte inadvertently not included in sample analysis.
--- = Analysis not required and/or well contains separate phase
= Analytical result exceeds the respective screening level.

**TABLE 3**
**Refinery Wells Analytical Summary**
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| | | | MW-30 | | | | | | | | | MW-31 | | | | | | MW-44 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| **Volatile Organic Compounds (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 5.24E+00 | (5) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane | 6.00E+01 | (3) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 1.00E+01 | (3) | < 200 | --- | < 200 | --- | < 200 | --- | < 200 | < 200 | < 200 | < 100 | < 100 | < 100 | < 200 | < 40 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 1,1,2-Trichloroethane | 5.00E+00 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 2.50E+01 | (3) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5.00E+00 | (3) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene | - | - | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichlorobenzene | - | - | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichloropropane | 9.60E-02 | (5) | < 200 | --- | < 200 | --- | < 200 | --- | < 200 | < 200 | < 200 | < 100 | < 100 | < 100 | < 200 | < 40 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,4-Trimethylbenzene | 1.50E+01 | (1) | **3600** | --- | **3600** | --- | **3900** | --- | **4100** | **5900** | **4500** | **1500** | **1800** | **1400** | **2900** | **1200** | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dibromo-3-chloropropane | 2.00E-01 | (2) | < 200 | --- | < 200 | --- | < 200 | --- | < 200 | < 200 | < 200 | < 100 | < 100 | < 100 | < 200 | < 40 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 1,2-Dibromoethane (EDB) | 5.00E-02 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane (EDC) | 5.00E+00 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 5.00E+00 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3,5-Trimethylbenzene | 1.20E+01 | (1) | **760** | --- | **840** | --- | **830** | --- | **900** | **1500** | **950** | **98** | **270** | **230** | **220** | **69** | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichlorobenzene | - | - | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane | 7.30E+02 | (1) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | < 400 | --- | < 400 | --- | < 400 | --- | < 400 | < 400 | < 400 | < 200 | < 200 | < 200 | < 400 | <80 | --- | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| 2,2-Dichloropropane | - | - | < 200 | --- | < 200 | --- | < 200 | --- | < 200 | < 200 | < 200 | < 100 | < 100 | < 100 | < 200 | < 40 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 2-Butanone | 7.06E+03 | (5) | < 1000 | --- | < 1000 | --- | < 1000 | --- | < 1000 | < 1000 | < 1000 | < 500 | < 500 | < 500 | < 1000 | < 200 | --- | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Chlorotoluene | 7.30E+02 | (1) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Hexanone | - | - | < 1000 | --- | < 1000 | --- | < 1000 | --- | < 1000 | < 1000 | < 1000 | < 500 | < 500 | < 500 | < 1000 | < 200 | --- | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | < 400 | --- | < 400 | --- | < 400 | --- | < 400 | **450** | < 400 | < 200 | < 200 | **270** | <400 | **84** | --- | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| 4-Chlorotoluene | 2.60E+03 | (1) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 4-Isopropyltoluene | - | - | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 4-Methyl-2-pentanone | - | - | < 1000 | --- | < 1000 | --- | < 1000 | --- | < 1000 | < 1000 | < 1000 | < 500 | < 500 | < 500 | < 1000 | < 200 | --- | < 10 | < 10 | < 10 | < 10 | < 10 |
| Acetone | 2.18E+04 | (5) | < 1000 | --- | < 1000 | --- | < 1000 | --- | < 1000 | **1600** | < 1000 | < 500 | < 500 | < 500 | <1000 | < 200 | --- | < 10 | < 10 | **16** | < 10 | < 10 |
| Benzene | 5.00E+00 | (2) | **4800** | **5700** | **5400** | **4700** | **6300** | **6700** | **5800** | **9500** | **6700** | **2500** | **4200** | **2900** | **3800** | **3300** | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromobenzene | 2.00E+01 | (1) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromodichloromethane | 1.17E+00 | (5) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 8.50E+00 | (1) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 8.66E+00 | (5) | < 300 | --- | < 300 | --- | < 300 | --- | < 100 | < 300 | < 300 | < 150 | < 150 | < 150 | < 300 | < 60 | --- | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Carbon disulfide | 1.04E+03 | (5) | < 1000 | --- | < 1000 | --- | < 1000 | --- | < 1000 | < 1000 | < 1000 | < 500 | < 500 | < 500 | < 1000 | < 200 | --- | < 10 | < 10 | < 10 | < 10 | < 10 |
| Carbon Tetrachloride | 5.00E+00 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 1.00E+02 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroethane | - | - | < 200 | --- | < 200 | --- | < 200 | --- | < 200 | < 200 | < 200 | < 100 | < 100 | < 100 | < 200 | < 40 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Chloroform | 1.00E+02 | (3) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 1.78E+01 | (5) | < 300 | --- | < 300 | --- | < 300 | --- | < 100 | < 300 | < 300 | < 150 | < 150 | < 150 | < 300 | < 60 | --- | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| cis-1,2-DCE | 7.00E+01 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,3-Dichloropropene | - | - | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromochloromethane | 1.47E+00 | (5) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromomethane | 3.70E+02 | (1) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane | 3.95E+02 | (5) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene | 7.00E+02 | (2) | **3800** | **5400** | **4300** | **3700** | **4400** | **3700** | **4100** | **6300** | **4500** | **960** | **1400** | **1200** | **1600** | **830** | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Hexachlorobutadiene | 8.60E-01 | (1) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Isopropylbenzene | 6.79E+02 | (5) | **140** | --- | **130** | --- | < 100 | --- | **120** | **220** | < 100 | **82** | **94** | **100** | **160** | **88** | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl tert-butyl ether (MTBE) | 1.25E+02 | (5) | < 100 | < 100 | < 100 | <50 | < 100 | < 100 | < 100 | < 32 | < 100 | < 50 | < 50 | < 50 | < 100 | <20 | --- | **1.2** | **1.3** | **1.1** | **1.5** | **1.8** |

**TABLE 3**
**Refinery Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-30 | | | | | | | | | MW-31 | | | | | | MW-44 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| Methylene Chloride | 5.00E+00 | (2) | < 300 | --- | < 300 | --- | < 300 | --- | < 300 | < 300 | < 300 | < 150 | < 150 | < 150 | < 300 | < 60 | --- | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Naphthalene | 1.43E+00 | (5) | 610 | --- | 760 | --- | 960 | --- | 970 | 1400 | 950 | 170 | 230 | 320 | 260 | 160 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| n-Butylbenzene | - | - | < 300 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 150 | < 50 | < 50 | < 100 | <20 | --- | < 3.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| n-Propylbenzene | - | - | 500 | --- | 550 | --- | 610 | --- | 600 | 890 | 610 | 190 | 300 | 260 | 570 | 230 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| sec-Butylbenzene | - | - | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | 30 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Styrene | 1.00E+02 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| tert-Butylbenzene | - | - | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene (PCE) | 5.00E+00 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | 7.50E+02 | (3) | 6300 | 3500 | 8800 | 1600 | 5600 | 5000 | 3600 | 8000 | 6700 | 210 | 2000 | 460 | <100 | 24 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-DCE | 1.00E+02 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 4.30E-01 | (1) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene (TCE) | 5.00E+00 | (2) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorofluoromethane | 1.29E+03 | (5) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vinyl chloride | 1.00E+00 | (3) | < 100 | --- | < 100 | --- | < 100 | --- | < 100 | < 100 | < 100 | < 50 | < 50 | < 50 | < 100 | < 20 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Xylenes, Total | 6.20E+02 | (3) | 14000 | 18000 | 16000 | 9400 | 15000 | 14000 | 14000 | 24000 | 18000 | 2800 | 5100 | 4200 | 3800 | 1600 | --- | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 1,3-Dichlorobenzene | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <100 | < 20 | --- | --- | --- | --- | <100 | --- | --- | --- | --- | < 20 | < 20 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | 19 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <100 | < 20 | --- | --- | --- | --- | <100 | --- | --- | --- | --- | < 20 | < 20 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Chlorophenol | 1.83E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | 200 | 210 | --- | --- | --- | --- | 85 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Methylphenol | 1.80E+03 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Nitroaniline | 1.10E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 2-Nitrophenol | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 3,3´-Dichlorobenzidine | 1.50E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 3+4-Methylphenol | 1.80E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | 25 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 3-Nitroaniline | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 4,6-Dinitro-2-methylphenol | - | - | --- | --- | --- | --- | --- | --- | --- | <100 | < 20 | --- | --- | --- | --- | <100 | --- | --- | --- | --- | < 20 | < 20 |
| 4-Bromophenyl phenyl ether | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 4-Chloro-3-methylphenol | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 4-Chloroaniline | 3.40E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 4-Chlorophenyl phenyl ether | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| 4-Nitroaniline | 3.40E+00 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 20 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 20 | < 20 |
| 4-Nitrophenol | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Acenaphthene | 2.19E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Acenaphthylene | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Aniline | 1.20E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Anthracene | 1.10E+04 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Azobenzene | 1.20E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Benz(a)anthracene | 9.21E-01 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(a)pyrene | 2.00E-01 | (2) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(g,h,i)perylene | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |

**TABLE 3**
**Refinery Wells Analytical Summary**
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| | | | MW-30 | | | | | | | | | MW-31 | | | | | | MW-44 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| Benzoic acid | 1.50E+05 | (1) | --- | --- | --- | --- | --- | --- | --- | <100 | < 20 | --- | --- | --- | --- | <100 | --- | --- | --- | --- | < 20 | < 20 |
| Benzyl alcohol | 1.80E+04 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Carbazole | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Chrysene | 9.21E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Dibenzofuran | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Diethyl phthalate | 2.92E+04 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Dimethyl phthalate | 3.65E+05 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Di-n-octyl phthalate | - | - | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Fluoranthene | 1.46E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Fluorene | 1.46E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <50 | < 10 | --- | --- | --- | --- | <50 | --- | --- | --- | --- | < 10 | < 10 |
| Hexachlorobenzene | 1.00E+00 | (2) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Hexachlorobutadiene | 8.60E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Hexachloroethane | 3.65E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Isophorone | 7.07E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Naphthalene | 1.43E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | **390** | < 10 | --- | --- | --- | --- | **140** | --- | --- | --- | --- | < 10 | < 10 |
| Nitrobenzene | 1.49E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Pentachlorophenol | 1.00E+00 | (2) | --- | --- | --- | --- | --- | --- | --- | <200 | < 40 | --- | --- | --- | --- | <200 | --- | --- | --- | --- | < 40 | < 40 |
| Phenanthrene | 1.10E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <50 | < 10 | --- | --- | --- | --- | <50 | --- | --- | --- | --- | < 10 | < 10 |
| Phenol | 5.00E+00 | (3) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Pyrene | 1.10E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| Pyridine | 3.70E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | < 50 | < 10 | --- | --- | --- | --- | < 50 | --- | --- | --- | --- | < 10 | < 10 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | < 0.50 | --- | < 0.5 | --- | <2.0 | --- | 0.12 | <1.0 | **0.15** | **0.48** | **0.51** | **0.13** | **0.16** | **0.21** | **0.15** | **0.35** | **0.25** | **0.13** | **0.19** | **0.62** |
| Chloride | 250 | (3) | **230** | --- | **230** | --- | **290** | --- | **290** | **230** | **210** | **360** | **380** | **540** | **660** | **720** | **740** | **59** | **59** | **65** | **69** | **72** |
| Nitrite | 1 | (2) | < 0.50 | --- | < 0.5 | --- | ***9.5** | --- | <2.0 | --- | *<0.10 | < 0.10 | < 2.0 | *<1.0 | <2.0 | <2.0 | <1.0 | < 0.10 | *<1.0 | <0.10 | *<1.0 | <0.10 |
| Bromide | - | - | **3.9** | --- | **3.9** | --- | **0.25** | --- | **4.90** | **4.60** | **5.60** | **0.22** | **2.1** | **3.00** | **12.00** | **15.00** | **17.00** | **0.22** | **0.20** | **0.23** | **0.27** | **0.28** |
| Nitrate | 10 | (3) | < 0.50 | --- | < 0.5 | --- | **9.50** | --- | <0.10 | <2.0 | *<0.10 | **0.92** | **0.73** | --- | **0.95** | **0.14** | <0.10 | **0.23** | --- | **0.19** | *<1.0 | <0.10 |
| Phosphorus | - | - | < 2.5 | --- | < 2.5 | --- | <0.50 | --- | <0.50 | <5.0 | <0.50 | < 0.50 | < 0.5 | <0.50 | <0.50 | <0.50 | <0.50 | < 10 | <10 | <10 | <0.50 | <0.50 |
| Sulfate | 600 | (3) | **24** | --- | **23** | --- | **9** | --- | **47** | **24** | **12** | **4.6** | **88** | **9** | **4.8** | **22.0** | **6.4** | **2800** | **3200** | **3200** | **2900** | **3000** |
| Carbon Dioxide ($CO_2$) | - | - | **1300** | --- | **1400** | --- | **1300** | --- | **1300** | **1100** | **1500** | **1100** | **1100** | **1000** | **1100** | **1000** | **1100** | **350** | **340** | **340** | **330** | **360** |
| Alkalinity ($CaCO_3$) | - | - | **1400** | --- | **1500** | --- | **1400** | --- | **1300** | **1200** | **1400** | **1200** | **1200** | **1100** | **1100** | **1100** | **1100** | **380** | **360** | **340** | **350** | **350** |
| Bicarbonate ($CaCO_3$) | - | - | **1400** | --- | **1500** | --- | **1400** | --- | **1300** | **1200** | **1400** | **1200** | **1200** | **1100** | **1100** | **1100** | **1100** | **380** | **360** | **340** | **350** | **350** |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | < 0.020 | --- | < 0.02 | --- | <0.02 | --- | <0.02 | <0.02 | <0.02 | < 0.020 | < 0.020 | <0.02 | <0.02 | <0.02 | <0.02 | < 0.020 | <0.02 | <0.02 | <0.02 | <0.02 |
| Barium | 1.0 | (3) | **0.73** | --- | **1.1** | --- | **0.84** | --- | **0.77** | **0.91** | **0.72** | **0.90** | **1.1** | **0.8** | **0.79** | **0.81** | **1.1** | **0.32** | <0.02 | <0.02 | <0.02 | <0.02 |
| Cadmium | 0.005 | (2) | < 0.0020 | --- | < 0.002 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | **0.0081** | --- | < 0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | **0.046** | <0.006 | <0.006 | <0.006 | <0.006 |
| Lead | 0.015 | (2) | **0.031** | --- | < 0.005 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | **0.0013** | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | **0.023** | <0.005 | <0.005 | <0.005 | <0.005 |
| Selenium | 0.05 | (2) | < 0.050 | --- | < 0.05 | --- | <0.05 | --- | <0.05 | <0.05 | <0.25 | < 0.050 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 | <0.25 |
| Silver | 0.05 | (3) | < 0.025 | --- | < 0.005 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.025 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.025 | <0.005 | <0.005 | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | < 0.00020 | --- | < 0.0002 | --- | <0.0002 | --- | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |

**TABLE 3**
**Refinery Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-30 | | | | | | | | MW-31 | | | | | | MW-44 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | **0.0067** | --- | **0.0039** | --- | **0.0036** | --- | <0.02 | <0.02 | <0.02 | < 0.010 | **0.0042** | **0.0063** | <0.02 | <0.02 | <0.02 | < 0.020 | <0.002 | <0.02 | <0.02 | <0.02 |
| Barium | 1.0 | (3) | **0.93** | --- | **0.93** | --- | **0.83** | --- | **0.74** | **0.7** | **0.72** | **0.81** | **1.3** | **0.76** | **0.72** | **0.81** | **1.1** | **0.014** | **0.014** | <0.02 | **0.7** | <0.02 |
| Cadmium | 0.01 | (3) | < 0.0020 | --- | < 0.002 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 | < 0.0020 | < 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 |
| Calcium | - | - | **140** | --- | **150** | --- | **150** | --- | **150** | **190** | --- | **100** | **140** | **110** | **140** | **150** | --- | **470** | **480** | **470** | **190** | **470** |
| Chromium | 0.05 | (3) | < 0.0060 | --- | < 0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 |
| Copper | 1.0 | (3) | **0.018** | --- | < 0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 | **0.016** | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | **0.034** | <0.006 | <0.006 | <0.006 | <0.006 |
| Iron | 1.0 | (3) | **3.3** | --- | **2.7** | --- | **0.14** | --- | **0.1** | **0.4** | **0.37** | **0.2** | **0.19** | **0.14** | **0.1** | **0.12** | **0.21** | **0.37** | <0.02 | <0.02 | **0.4** | **0.083** |
| Lead | 0.05 | (3) | < 0.0010 | --- | < 0.001 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.0010 | < 0.001 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.0010 | <0.005 | <0.005 | <0.005 | <0.005 |
| Magnesium | - | - | **42** | --- | 48 | --- | **36** | --- | **35** | **42** | --- | **42** | **53** | **53** | **67** | **63** | NS[3] | **56** | **68** | **68** | **42** | **64** |
| Manganese | 0.2 | (3) | **2.2** | --- | **2.8** | --- | **1.5** | --- | **1.4** | **1.7** | **1.7** | **0.56** | **1.1** | **0.44** | **0.47** | **0.51** | **0.71** | **0.82** | **0.0029** | **0.025** | **1.7** | **1.7** |
| Mercury | - | - | < 0.00020 | --- | --- | --- | --- | --- | --- | --- | --- | < 0.00020 | --- | --- | --- | --- | --- | < 0.00020 | --- | --- | --- | --- |
| Potassium | - | - | **3.8** | --- | **4.1** | --- | **3.6** | --- | **3.3** | **4** | NS[3] | **4.3** | **5.7** | **4.2** | **4.4** | **4.7** | NS[3] | **8.6** | **8.2** | **8.1** | **4** | **8** |
| Selenium | 0.05 | (3) | **0.016** | --- | **0.0098** | --- | **0.015** | --- | <0.05 | <0.05 | <0.25 | **0.024** | **0.015** | **0.029** | <0.05 | <0.05 | <0.05 | < 0.020 | <0.002 | <0.05 | <0.05 | <0.25 |
| Silver | 0.05 | (3) | < 0.0050 | --- | < 0.005 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 |
| Sodium | - | - | **560** | --- | **590** | --- | **580** | --- | **570** | **600** | --- | **560** | **570** | **610** | **630** | **690** | --- | **910** | **920** | **940** | **600** | **900** |
| Uranium | 0.03 | (3) | **0.0021** | --- | **0.0024** | --- | <0.001 | --- | <0.001 | <0.001 | <0.001 | < 0.0010 | **0.008** | <0.001 | <0.001 | <0.001 | <0.001 | **0.0019** | <0.002 | <0.001 | <0.001 | **0.001** |
| Zinc | 10 | (3) | < 0.010 | --- | **0.040** | --- | **0.026** | --- | <0.05 | <0.05 | <0.05 | < 0.010 | **0.085** | **0.029** | <0.05 | <0.05 | <0.05 | < 0.010 | **0.086** | <0.05 | <0.05 | <0.05 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | **9.9** | --- | **4.4** | --- | **4.5** | --- | **7.0** | **24** | **6.2** | **3.8** | **1.8** | **1.1** | **1.8** | **5.1** | **5.1** | **0.26** | <0.20 | **0.22** | <1.0 | <1.0 |
| Gasoline Range Organics | - | - | **83** | --- | **77** | --- | **90** | --- | **63** | **84** | **65** | **20** | **26** | **25** | **30** | **19** | **19** | < 0.050 | <0.05 | <0.05 | <0.05 | <.05 |
| Motor Oil Range Organics | - | - | < 2.5 | --- | < 2.5 | --- | <2.5 | --- | <2.5 | <5.0 | <2.5 | < 2.5 | < 2.5 | <2.5 | <2.5 | <0.50 | <5.0 | < 2.5 | <2.5 | <2.5 | <5.0 | <5.0 |

**'Wells with product for the past two [illegible]s or more are not shown on Tables. [illegible] includes RW-1, RW-18, MW-20, MW-21, RW-23, RW-28, MW-40, RW-42 and RW-43.**

RW - 1 - Product since 2009
RW - 18 - Product since 2011
RW - 23 - Product since 2010
RW - 28 - Product since 2008
RW - 42 - Product since 2008
RW - 43 - Product since 2010
MW - 20 - Product since 2008
MW - 21 - Product since 2008
MW - 40 - Product since 2011

**Notes:**

(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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
(4) NMED TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels

- = No screening level available
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
--- = Analyte inadvertently not included in sample analysis.
--- = Analysis not required and/or well contains separate phase
= Analytical result exceeds the respective screening level.

**TABLE 4**
**Cross-Gradient Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-1 | | | | | | | | MW-13 | | | | | | | | MW-26 | | | | | MW-27 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 |
| **Volatile Organic Compounds (ug/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 5.24E+00 | (5) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <2.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <2.0 | <1.0 |
| 1,1,1-Trichloroethane | 6.00E+01 | (3) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,1,2,2-Tetrachloroethane | 1.00E+01 | (3) | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <2.0 | <2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <2.0 | <2.0 | --- | < 20 | < 20 | < 20 | < 10 | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 |
| 1,1,2-Trichloroethane | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,1-Dichloroethane | 2.50E+01 | (3) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,1-Dichloroethene | 5.00E+00 | (3) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,1-Dichloropropene | - | - | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,2,3-Trichlorobenzene | - | - | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,2,3-Trichloropropane | 9.60E-02 | (5) | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <2.0 | <2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <2.0 | <2.0 | --- | < 20 | < 20 | < 20 | <10 | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,2,4-Trimethylbenzene | 1.50E+01 | (1) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | **1100** | **830** | **830** | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,2-Dibromo-3-chloropropane | 2.00E-01 | (2) | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <2.0 | <1.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <2.0 | <1.0 | --- | < 20 | < 20 | < 20 | < 10 | < 2.0 | < 2.0 | < 2.0 | <2.0 | <1.0 |
| 1,2-Dibromoethane (EDB) | 5.00E-02 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <2.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <2.0 | <2.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <2.0 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,2-Dichloroethane (EDC) | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,2-Dichloropropane | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,3,5-Trimethylbenzene | 1.20E+01 | (1) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | **280** | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,3-Dichlorobenzene | - | - | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,3-Dichloropropane | 7.30E+02 | (1) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | < 4.0 | --- | < 4.0 | --- | < 4.0 | --- | <4.0 | <4.0 | < 4.0 | --- | < 4.0 | --- | < 4.0 | --- | <4.0 | **8.1** | --- | **130** | < 40 | < 40 | <20 | < 4.0 | < 4.0 | < 4.0 | <4.0 | <4.0 |
| 2,2-Dichloropropane | - | - | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <2.0 | <2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <2.0 | <2.0 | --- | < 20 | < 20 | < 20 | < 10 | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 |
| 2-Butanone | 7.06E+03 | (5) | < 10 | --- | < 10 | --- | < 10 | --- | <10.0 | <10.0 | < 10 | --- | < 10 | --- | < 10 | --- | <10.0 | <10.0 | --- | < 100 | < 100 | < 100 | < 50 | < 10 | < 10 | < 10 | <10.0 | <10.0 |
| 2-Chlorotoluene | 7.30E+02 | (1) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 2-Hexanone | - | - | < 10 | --- | < 10 | --- | < 10 | --- | <10.0 | <10.0 | < 10 | --- | < 10 | --- | < 10 | --- | <10.0 | <10.0 | --- | < 100 | < 100 | < 100 | < 50 | < 10 | < 10 | < 10 | <1.0 | <10.0 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | < 4.0 | --- | < 4.0 | --- | < 4.0 | --- | <4.0 | <4.0 | < 4.0 | --- | < 4.0 | --- | < 4.0 | --- | <4.0 | <4.0 | --- | **210** | < 40 | < 40 | <20 | < 4.0 | < 4.0 | < 4.0 | <4.0 | <4.0 |
| 4-Chlorotoluene | 2.60E+03 | (1) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 4-Isopropyltoluene | - | - | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | **33** | < 10 | < 10 | <5 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| 4-Methyl-2-pentanone | - | - | < 10 | --- | < 10 | --- | < 10 | --- | <10.0 | <1.0 | < 10 | --- | < 10 | --- | < 10 | --- | <10.0 | <1.0 | --- | < 100 | < 100 | < 100 | < 50 | < 10 | < 10 | < 10 | <10.0 | <1.0 |
| Acetone | 2.18E+04 | (5) | < 10 | --- | < 10 | --- | < 10 | --- | <10.0 | <10.0 | < 10 | --- | < 10 | --- | < 10 | --- | <10.0 | <10.0 | --- | < 100 | < 100 | < 100 | < 50 | < 10 | < 10 | < 10 | <10.0 | <10.0 |
| Benzene | 5.00E+00 | (2) | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | **18** | <1.0 | < 1.0 | <1.0 | < 1.0 | <1.0 | < 1.0 | <1.0 | <1.0 | <1.0 | --- | **29** | **26** | **26** | <10 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Bromobenzene | 2.00E+01 | (1) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Bromodichloromethane | 1.17E+00 | (5) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Bromoform | 8.50E+00 | (1) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Bromomethane | 8.66E+00 | (5) | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | <1.0 | <1.0 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | <1.0 | <1.0 | --- | < 30 | < 30 | < 30 | < 15 | < 3.0 | < 3.0 | < 3.0 | <1.0 | <1.0 |
| Carbon disulfide | 1.04E+03 | (5) | < 10 | --- | < 10 | --- | < 10 | --- | <10.0 | <10.0 | < 10 | --- | < 10 | --- | < 10 | --- | <10.0 | <10.0 | --- | < 100 | < 100 | < 100 | < 50 | < 10 | < 10 | < 10 | <10.0 | <10.0 |
| Carbon Tetrachloride | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Chlorobenzene | 1.00E+02 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Chloroethane | - | - | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <2.0 | <2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <2.0 | <2.0 | --- | < 20 | < 20 | < 20 | < 10 | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 |
| Chloroform | 1.00E+02 | (3) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Chloromethane | 1.78E+01 | (5) | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | <1.0 | <1.0 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | <1.0 | <1.0 | --- | < 30 | < 30 | < 30 | < 15 | < 3.0 | < 3.0 | < 3.0 | <1.0 | <1.0 |
| cis-1,2-DCE | 7.00E+01 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| cis-1,3-Dichloropropene | - | - | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Dibromochloromethane | 1.47E+00 | (5) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Dibromomethane | 3.70E+02 | (1) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Dichlorodifluoromethane | 3.95E+02 | (5) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Ethylbenzene | 7.00E+02 | (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 | --- | **110** | **46** | **46** | <5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Hexachlorobutadiene | 8.60E-01 | (1) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Isopropylbenzene | 6.79E+02 | (5) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | **68** | **93** | **93** | <5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Methyl tert-butyl ether (MTBE) | 1.25E+02 | (5) | < 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 | **1.2** | **1.7** | --- | < 10 | < 10 | < 10 | **9.5** | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Methylene Chloride | 5.00E+00 | (2) | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | <3.0 | <3.0 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | <3.0 | <3.0 | --- | < 30 | < 30 | < 30 | < 15 | < 3.0 | < 3.0 | < 3.0 | <3.0 | <3.0 |
| Naphthalene | 1.43E+00 | (5) | < 2.0 | --- | < 3.0 | --- | < 2.0 | --- | <2.0 | <2.0 | < 2.0 | --- | < 3.0 | --- | < 2.0 | --- | <2.0 | <2.0 | --- | **290** | **110** | **110** | <10 | < 2.0 | < 3.0 | < 2.0 | <2.0 | <2.0 |
| n-Butylbenzene | - | - | < 3.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 3.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | **46** | < 10 | < 10 | < 5.0 | < 3.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| n-Propylbenzene | - | - | < 1.0 | --- | < 2.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 2.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | **110** | **110** | **110** | <5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| sec-Butylbenzene | - | - | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | **31** | **15** | **14** | <10 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Styrene | 1.00E+02 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| tert-Butylbenzene | - | - | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Tetrachloroethene (PCE) | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Toluene | 7.50E+02 | (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 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| trans-1,2-DCE | 1.00E+02 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| trans-1,3-Dichloropropene | 4.30E-01 | (1) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Trichloroethene (TCE) | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Trichlorofluoromethane | 1.29E+03 | (5) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Vinyl chloride | 1.00E+00 | (3) | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <1.0 | <1.0 | --- | < 10 | < 10 | < 10 | < 5.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Xylenes, Total | 6.20E+02 | (3) | < 1.5 | < 2.0 | < 1.5 | < 2.0 | < 1.5 | < 2.0 | <1.5 | <1.5 | < 1.5 | <2.0 | < 1.5 | <1.0 | < 1.5 | <2.0 | <1.5 | <1.5 | --- | **1400** | < 15 | < 15 | < 7.5 | < 1.5 | < 1.5 | < 1.5 | <1.5 | <1.5 |

**TABLE 4**
**Cross-Gradient Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-1 | | | | | | | | MW-13 | | | | | | | | MW-26 | | | | | MW-27 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 1,3-Dichlorobenzene | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <20 | --- | --- | --- | --- | --- | --- | --- | <20 | --- | --- | --- | --- | <20 | --- | --- | --- | --- | <20 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2-Chlorophenol | 1.83E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2-Methylphenol | 1.80E+03 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2-Nitroaniline | 1.10E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 2-Nitrophenol | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 3,3'-Dichlorobenzidine | 1.50E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 3+4-Methylphenol | 1.80E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 3-Nitroaniline | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 4,6-Dinitro-2-methylphenol | - | - | --- | --- | --- | --- | --- | --- | --- | <20 | --- | --- | --- | --- | --- | --- | --- | <20 | --- | --- | --- | --- | <20 | --- | --- | --- | --- | <20 |
| 4-Bromophenyl phenyl ether | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 4-Chloro-3-methylphenol | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 4-Chloroaniline | 3.40E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 4-Chlorophenyl phenyl ether | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 4-Nitroaniline | 3.40E+00 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| 4-Nitrophenol | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Acenaphthene | 2.19E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Acenaphthylene | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Aniline | 1.20E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Anthracene | 1.10E+04 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Azobenzene | 1.20E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Benz(a)anthracene | 9.21E-01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Benzo(a)pyrene | 2.00E-01 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Benzo(g,h,i)perylene | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Benzoic acid | 1.50E+05 | (1) | --- | --- | --- | --- | --- | --- | --- | <20 | --- | --- | --- | --- | --- | --- | --- | <20 | --- | --- | --- | --- | <20 | --- | --- | --- | --- | <20 |
| Benzyl alcohol | 1.80E+04 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Carbazole | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Chrysene | 9.21E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Dibenzofuran | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Diethyl phthalate | 2.92E+04 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Dimethyl phthalate | 3.65E+05 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Di-n-octyl phthalate | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Fluoranthene | 1.46E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Fluorene | 1.46E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Hexachlorobenzene | 1.00E+00 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Hexachlorobutadiene | 8.60E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Hexachloroethane | 3.65E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Isophorone | 7.07E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Naphthalene | 1.43E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Nitrobenzene | 1.49E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Pentachlorophenol | 1.00E+00 | (2) | --- | --- | --- | --- | --- | --- | --- | <40 | --- | --- | --- | --- | --- | --- | --- | <40 | --- | --- | --- | --- | <40 | --- | --- | --- | --- | <40 |
| Phenanthrene | 1.10E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Phenol | 5.00E+00 | (3) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Pyrene | 1.10E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |
| Pyridine | 3.70E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 | --- | --- | --- | --- | <10 |

**TABLE 4**
**Cross-Gradient Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-1 | | | | | | | | MW-13 | | | | | | | | MW-26 | | | | | MW-27 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | 0.56 | --- | 0.48 | --- | 0.54 | --- | 0.56 | 0.53 | < 0.10 | --- | < 0.10 | --- | 0.15 | --- | 0.11 | 0.16 | --- | < 1.0 | <0.50 | 0.34 | 0.32 | 0.16 | 0.14 | 0.4 | 0.39 | 0.38 |
| Chloride | 250 | (3) | 12 | --- | 8.5 | --- | 11 | --- | 15 | 16 | 170 | --- | 190 | --- | 230 | --- | 230 | 200 | --- | 250 | 300 | 320 | 400 | 590 | 480 | 380 | 240 | 180 |
| Nitrite | 1 | (2) | < 0.10 | --- | <0.10 | --- | <0.10 | --- | <0.10 | <0.10 | 0.36 | --- | < 2.0 | --- | <2.0 | --- | <2.0 | <2.0 | --- | < 1.0 | <0.50 | <2.0 | <2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 | <2.0 |
| Bromide | - | - | < 0.10 | --- | <0.10 | --- | 0.10 | --- | 0.12 | 0.30 | 1.8 | --- | 1.7 | --- | 2.70 | --- | 2.80 | 2.60 | --- | 4.1 | 4.30 | 4.40 | 5.20 | 5.6 | 4.3 | 3.10 | 1.80 | 1.30 |
| Nitrate | 10 | (3) | 1.0 | --- | 0.49 | --- | 0.99 | --- | 1.40 | 0.69 | 3.6 | --- | 4.0 | --- | 5.80 | --- | 5.40 | 5.80 | --- | < 1.0 | <0.50 | 1.90 | <0.10 | < 0.10 | < 0.10 | <0.1 | <0.1 | <0.10 |
| Phosphorus | - | - | < 0.50 | --- | <0.50 | --- | <0.50 | --- | <0.50 | <0.50 | < 0.50 | --- | < 0.50 | --- | <0.50 | --- | <0.50 | <0.50 | --- | < 5.0 | <2.5 | <0.50 | <0.50 | < 10 | < 10 | <0.50 | <0.50 | <0.5 |
| Sulfate | 600 | (6) | 99 | --- | 76 | --- | 110 | --- | 150 | 70 | 1200 | --- | 1100 | --- | 1100 | --- | 1100 | 1000 | --- | < 5.0 | <2.5 | 0.99 | <0.50 | 3200 | 1800 | 1500 | 1000 | 960 |
| Carbon Dioxide ($CO_2$) | - | - | 240 | --- | 250 | --- | 270 | --- | 280 | 250 | 870 | --- | 870 | --- | 880 | --- | 900 | 840 | --- | 1100 | 1100 | 1100 | 1100 | 190 | 280 | 380 | 290 | 280 |
| Alkalinity ($CaCO_3$) | - | - | 270 | --- | 270 | --- | 290 | --- | 280 | 270 | 950 | --- | 940 | --- | 940 | --- | 900 | 890 | --- | 1200 | 1200 | 1100 | 1100 | 200 | 310 | 410 | 290 | 290 |
| Bicarbonate ($CaCO_3$) | - | - | 270 | --- | 270 | --- | 290 | --- | 280 | 270 | 950 | --- | 940 | --- | 940 | --- | 900 | 890 | --- | 1200 | 1200 | 1100 | 1100 | 200 | 310 | 410 | 290 | 290 |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | < 0.020 | --- | <0.02 | --- | <0.02 | --- | <0.02 | <0.02 | < 0.020 | --- | < 0.001 | --- | <0.02 | --- | <0.02 | <0.02 | --- | <0.02 | <0.02 | <0.02 | <0.02 | < 0.020 | <0.02 | <0.02 | <0.02 | <0.02 |
| Barium | 1 | (3) | 0.078 | --- | 0.11 | --- | 0.038 | --- | 0.099 | 0.18 | 0.026 | --- | 0.030 | --- | 0.027 | --- | 0.027 | 0.023 | --- | 2.4 | 2.3 | 2.3 | 2.4 | 0.072 | 0.091 | 0.088 | 0.084 | 0.03 |
| Cadmium | 0.005 | (2) | < 0.0020 | --- | <0.002 | --- | <0.002 | --- | <0.002 | <0.002 | < 0.0020 | --- | < 0.002 | --- | <0.002 | --- | <0.002 | <0.002 | --- | < 0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | < 0.0060 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | 0.026 | --- | 0.01 | --- | <0.006 | --- | <0.006 | <0.006 | --- | < 0.006 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 |
| Lead | 0.015 | (2) | < 0.0050 | --- | <0.005 | --- | <0.005 | --- | <0.005 | <0.005 | < 0.0050 | --- | < 0.0050 | --- | <0.005 | --- | <0.005 | 0.005 | --- | < 0.005 | <0.005 | <0.005 | 0.008 | < 0.0050 | <0.005 | <0.005 | <0.005 | 0.007 |
| Selenium | 0.05 | (2) | < 0.050 | --- | <0.05 | --- | <0.05 | --- | <0.05 | <0.05 | < 0.050 | --- | < 0.050 | --- | <0.05 | --- | <0.05 | <0.25 | --- | < 0.05 | <0.05 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 | <0.05 |
| Silver | 0.05 | (3) | < 0.0050 | --- | <0.005 | --- | <0.005 | --- | <0.005 | <0.005 | < 0.0050 | --- | < 0.005 | --- | <0.005 | --- | <0.005 | <0.005 | --- | < 0.005 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | < 0.00020 | --- | <0.0002 | --- | <0.0002 | --- | <0.0002 | <0.0002 | < 0.00020 | --- | < 0.0002 | --- | <0.001 | --- | 0.0002 | <0.0002 | --- | < 0.0002 | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | < 0.0010 | --- | <0.001 | --- | <0.001 | --- | <0.02 | <0.02 | 0.0025 | --- | < 0.0021 | --- | 0.0028 | --- | <0.02 | <0.02 | --- | 0.099 | 0.009 | <0.02 | <0.02 | 0.0038 | 0.0030 | 0.0025 | <0.02 | <0.02 |
| Barium | 1 | (3) | 0.024 | --- | 0.025 | --- | 0.026 | --- | 0.025 | <0.02 | 0.024 | --- | 0.025 | --- | 0.024 | --- | 0.024 | 0.022 | --- | 2.3 | 2.3 | 2.1 | 2.2 | 0.057 | 0.045 | 0.046 | 0.03 | 0.03 |
| Cadmium | 0.01 | (3) | < 0.0020 | --- | <0.002 | --- | <0.002 | --- | <0.002 | <0.002 | < 0.0020 | --- | < 0.0020 | --- | <0.002 | --- | <0.002 | <0.002 | --- | < 0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.0020 | <0.0020 | <0.0020 | <0.0020 |
| Calcium | - | - | 70 | --- | 71 | --- | 77 | --- | 77 | 63 | 300 | --- | 290 | --- | 300 | --- | 270 | 240 | --- | 120 | 130 | 120 | 120 | 820 | 470 | 380 | 260 | 230 |
| Chromium | 0.05 | (3) | < 0.0060 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | < 0.0060 | --- | <0.0060 | --- | <0.006 | --- | <0.006 | <0.006 | --- | < 0.006 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 |
| Copper | 1 | (3) | < 0.0050 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | < 0.010 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | --- | <0.006 | <0.006 | <0.006 | <0.006 | < 0.020 | <0.006 | <0.006 | <0.006 | <0.006 |
| Iron | 1 | (3) | < 0.020 | --- | <0.020 | --- | 0.023 | --- | 0.039 | 0.041 | < 0.020 | --- | < 0.02 | --- | <0.02 | --- | <0.02 | <0.02 | --- | 5.2 | 6 | 6 | 7.2 | 0.19 | 0.35 | 0.13 | 0.2 | 0.4 |
| Lead | 0.05 | (3) | < 0.0010 | --- | <0.001 | --- | <0.005 | --- | <0.005 | <0.005 | < 0.0010 | --- | < 0.0010 | --- | 0.005 | --- | <0.005 | <0.005 | --- | < 0.0010 | <0.005 | <0.005 | <0.005 | < 0.0010 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| Magnesium | - | - | 16 | --- | 17 | --- | 19 | --- | 20 | 16 | 94 | --- | 89 | --- | 88 | --- | 94 | 76 | --- | 43 | 45 | 41 | 41 | 110 | 68 | 54 | 39 | 33 |
| Manganese | 0.2 | (3) | 0.074 | --- | 0.097 | --- | 0.039 | --- | 0.027 | 0.031 | 1.1 | --- | 0.97 | --- | 1.4 | --- | 1.4 | 1.3 | --- | 2.6 | 2.7 | 2.8 | 2.9 | 1.3 | 0.95 | 3 | 2.6 | 2.1 |
| Mercury | - | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Potassium | - | - | 2.1 | --- | 1.9 | --- | 2.4 | --- | 2.3 | 2.6 | 4.1 | --- | 4.9 | --- | 4.4 | --- | 4.3 | 4 | --- | 4.1 | 3.9 | 3.7 | 3.7 | 0.015 | 3.4 | 2.6 | 2.7 | 2.7 |
| Selenium | 0.05 | (3) | < 0.0010 | --- | <0.001 | --- | 0.0014 | --- | <0.05 | <0.05 | 0.01 | --- | < 0.010 | --- | 0.012 | --- | <0.05 | <0.05 | --- | <0.010 | 0.014 | <0.05 | <0.05 | 1.2 | <0.020 | 0.0095 | <0.05 | <0.05 |
| Silver | 0.05 | (3) | < 0.0050 | --- | <0.005 | --- | <0.005 | --- | <0.005 | <0.005 | < 0.0050 | --- | < 0.005 | --- | <0.005 | --- | <0.005 | <0.005 | --- | < 0.005 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 |
| Sodium | - | - | 67 | --- | 62 | --- | 78 | --- | 77 | 85 | 600 | --- | 610 | --- | 600 | --- | 600 | 540 | --- | 480 | 500 | 470 | 460 | 900 | 630 | 530 | 390 | 350 |
| Uranium | 0.03 | (3) | 0.0025 | --- | 0.0026 | --- | 0.0029 | --- | 0.0022 | 0.002 | 0.0084 | --- | 0.0087 | --- | 0.01 | --- | 0.0078 | 0.008 | --- | < 0.001 | <0.001 | <0.001 | <0.001 | 0.0051 | 0.0021 | 0.0015 | 0.0021 | 0.0014 |
| Zinc | 10 | (3) | < 0.010 | --- | 0.029 | --- | 0.057 | --- | <0.05 | <0.05 | < 0.010 | --- | 0.066 | --- | 0.068 | --- | <0.05 | <0.05 | --- | 0.056 | 0.072 | <0.05 | <0.05 | 0.01 | 0.11 | 0.053 | <0.05 | <0.05 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | < 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 | 0.34 | --- | 1.7 | 1.3 | <0.2 | 2.4 | < 0.20 | < 0.20 | 0.45 | <0.20 | 0.47 |
| Gasoline Range Organics | - | - | < 0.050 | < 0.050 | <0.05 | <0.050 | <0.05 | <0.05 | <0.05 | 0.067 | < 0.050 | --- | <0.05 | <0.050 | <0.05 | --- | <0.05 | <0.05 | --- | 12 | 4.0 | <0.05 | 4.3 | < 0.050 | 0.21 | <0.05 | <0.05 | <0.05 |
| 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 | <2.5 | <2.5 | < 2.5 | < 2.5 | <2.5 | <2.5 | <2.5 |

**Notes:**

(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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 TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels.
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels.
- = No screening level available.
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time.
--- = Analyte inadvertently not included in sample analysis.
--- = Analysis not required and/or well contains separate phase.
= Analytical result exceeds the respective screening level.

**TABLE 4**
**Cross-Gradient Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-32 | | | | | MW-33 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 |
| **Volatile Organic Compounds (ug/L)** | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 5.24E+00 | (5) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <2.0 | <1.0 |
| 1,1,1-Trichloroethane | 6.00E+01 | (3) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,1,2,2-Tetrachloroethane | 1.00E+01 | (3) | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 | < 2.0 | --- | --- | --- | < 2.0 | --- | <1.0 | <2.0 |
| 1,1,2-Trichloroethane | 5.00E+00 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,1-Dichloroethane | 2.50E+01 | (3) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,1-Dichloroethene | 5.00E+00 | (3) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,1-Dichloropropene | - | - | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,2,3-Trichlorobenzene | - | - | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,2,3-Trichloropropane | 9.60E-02 | (5) | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 | < 2.0 | --- | --- | --- | < 2.0 | --- | <2.0 | <2.0 |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,2,4-Trimethylbenzene | 1.50E+01 | (1) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,2-Dibromo-3-chloropropane | 2.00E-01 | (2) | < 2.0 | < 2.0 | < 2.0 | <2.0 | <1.0 | < 2.0 | --- | --- | --- | < 2.0 | --- | <2.0 | <1.0 |
| 1,2-Dibromoethane (EDB) | 5.00E-02 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <2.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <2.0 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,2-Dichloroethane (EDC) | 5.00E+00 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,2-Dichloropropane | 5.00E+00 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,3,5-Trimethylbenzene | 1.20E+01 | (1) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,3-Dichlorobenzene | - | - | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,3-Dichloropropane | 7.30E+02 | (1) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | < 4.0 | < 4.0 | < 4.0 | <4.0 | <4.0 | < 4.0 | --- | --- | --- | < 4.0 | --- | <4.0 | <4.0 |
| 2,2-Dichloropropane | - | - | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 | < 2.0 | --- | --- | --- | < 2.0 | --- | <2.0 | <2.0 |
| 2-Butanone | 7.06E+03 | (5) | < 10 | < 10 | < 10 | <10.0 | <10.0 | < 10 | --- | --- | --- | < 10 | --- | <10.0 | <10.0 |
| 2-Chlorotoluene | 7.30E+02 | (1) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 2-Hexanone | - | - | < 10 | < 10 | < 10 | <10.0 | <10.0 | < 10 | --- | --- | --- | < 10 | --- | <1.0 | <10.0 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | < 4.0 | < 4.0 | < 4.0 | <4.0 | <4.0 | < 4.0 | --- | --- | --- | < 4.0 | --- | <4.0 | <4.0 |
| 4-Chlorotoluene | 2.60E+03 | (1) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 4-Isopropyltoluene | - | - | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| 4-Methyl-2-pentanone | - | - | < 10 | < 10 | < 10 | <10.0 | <1.0 | < 10 | --- | --- | --- | < 10 | --- | <10.0 | <1.0 |
| Acetone | 2.18E+04 | (5) | < 10 | < 10 | < 10 | <10.0 | <10.0 | < 10 | --- | --- | --- | < 10 | --- | <10.0 | <10.0 |
| Benzene | 5.00E+00 | (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 |
| Bromobenzene | 2.00E+01 | (1) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Bromodichloromethane | 1.17E+00 | (5) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Bromoform | 8.50E+00 | (1) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Bromomethane | 8.66E+00 | (5) | < 3.0 | < 3.0 | < 3.0 | <1.0 | <1.0 | < 3.0 | --- | --- | --- | < 3.0 | --- | <1.0 | <1.0 |
| Carbon disulfide | 1.04E+03 | (5) | < 10 | < 10 | < 10 | <10.0 | <10.0 | < 10 | --- | --- | --- | < 10 | --- | <10.0 | <10.0 |
| Carbon Tetrachloride | 5.00E+00 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Chlorobenzene | 1.00E+02 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Chloroethane | - | - | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 | < 2.0 | --- | --- | --- | < 2.0 | --- | <2.0 | <2.0 |
| Chloroform | 1.00E+02 | (3) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Chloromethane | 1.78E+01 | (5) | < 3.0 | < 3.0 | < 3.0 | <1.0 | <1.0 | < 3.0 | --- | --- | --- | < 3.0 | --- | <1.0 | <1.0 |
| cis-1,2-DCE | 7.00E+01 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| cis-1,3-Dichloropropene | - | - | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Dibromochloromethane | 1.47E+00 | (5) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Dibromomethane | 3.70E+02 | (1) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Dichlorodifluoromethane | 3.95E+02 | (5) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Ethylbenzene | 7.00E+02 | (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 |
| Hexachlorobutadiene | 8.60E-01 | (1) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Isopropylbenzene | 6.79E+02 | (5) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Methyl tert-butyl ether (MTBE) | 1.25E+02 | (5) | < 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 | 5.00E+00 | (2) | < 3.0 | < 3.0 | < 3.0 | <3.0 | <3.0 | < 3.0 | --- | --- | --- | < 3.0 | --- | <3.0 | <3.0 |
| Naphthalene | 1.43E+00 | (5) | < 2.0 | < 3.0 | < 2.0 | <2.0 | <2.0 | < 2.0 | --- | --- | --- | < 2.0 | --- | <2.0 | <2.0 |
| n-Butylbenzene | - | - | < 3.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 3.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| n-Propylbenzene | - | - | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| sec-Butylbenzene | - | - | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Styrene | 1.00E+02 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| tert-Butylbenzene | - | - | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Tetrachloroethene (PCE) | 5.00E+00 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Toluene | 7.50E+02 | (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 |
| trans-1,2-DCE | 1.00E+02 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| trans-1,3-Dichloropropene | 4.30E-01 | (1) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Trichloroethene (TCE) | 5.00E+00 | (2) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Trichlorofluoromethane | 1.29E+03 | (5) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Vinyl chloride | 1.00E+00 | (3) | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 | < 1.0 | --- | --- | --- | < 1.0 | --- | <1.0 | <1.0 |
| Xylenes, Total | 6.20E+02 | (3) | < 1.5 | < 1.5 | < 1.5 | <1.5 | <1.5 | < 1.5 | <1.0 | --- | <2.0 | < 1.5 | <2.0 | <1.5 | <1.5 |

**TABLE 4**
**Cross-Gradient Wells Analytical Summary**
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| | | | MW-32 | | | | | MW-33 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 1,3-Dichlorobenzene | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | --- | --- | --- | --- | <20 | --- | --- | --- | --- | --- | --- | --- | <20 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2-Chlorophenol | 1.83E+02 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2-Methylphenol | 1.80E+03 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2-Nitroaniline | 1.10E+02 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 2-Nitrophenol | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 3,3'-Dichlorobenzidine | 1.50E-01 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 3+4-Methylphenol | 1.80E+02 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 3-Nitroaniline | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 4,6-Dinitro-2-methylphenol | - | - | --- | --- | --- | --- | <20 | --- | --- | --- | --- | --- | --- | --- | <20 |
| 4-Bromophenyl phenyl ether | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 4-Chloro-3-methylphenol | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 4-Chloroaniline | 3.40E-01 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 4-Chlorophenyl phenyl ether | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 4-Nitroaniline | 3.40E+00 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| 4-Nitrophenol | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Acenaphthene | 2.19E+03 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Acenaphthylene | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Aniline | 1.20E+01 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Anthracene | 1.10E+04 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Azobenzene | 1.20E-01 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Benz(a)anthracene | 9.21E-01 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Benzo(a)pyrene | 2.00E-01 | (2) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Benzo(g,h,i)perylene | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Benzoic acid | 1.50E+05 | (1) | --- | --- | --- | --- | <20 | --- | --- | --- | --- | --- | --- | --- | <20 |
| Benzyl alcohol | 1.80E+04 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Carbazole | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Chrysene | 9.21E+01 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Dibenzofuran | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Diethyl phthalate | 2.92E+04 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Dimethyl phthalate | 3.65E+05 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Di-n-octyl phthalate | - | - | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Fluoranthene | 1.46E+03 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Fluorene | 1.46E+03 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Hexachlorobenzene | 1.00E+00 | (2) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Hexachlorobutadiene | 8.60E-01 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Hexachloroethane | 3.65E+01 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Isophorone | 7.07E+02 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Naphthalene | 1.43E+00 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Nitrobenzene | 1.49E+01 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Pentachlorophenol | 1.00E+00 | (2) | --- | --- | --- | --- | <40 | --- | --- | --- | --- | --- | --- | --- | <40 |
| Phenanthrene | 1.10E+03 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Phenol | 5.00E+00 | (3) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Pyrene | 1.10E+03 | (5) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |
| Pyridine | 3.70E+01 | (1) | --- | --- | --- | --- | <10 | --- | --- | --- | --- | --- | --- | --- | <10 |

**TABLE 4**
**Cross-Gradient Wells Analytical Summary**
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| | | | MW-32 | | | | | MW-33 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | 0.16 | <0.10 | 0.22 | 0.2 | 0.21 | < 0.10 | --- | --- | --- | 0.3 | --- | 0.36 | 0.32 |
| Chloride | 250 | (3) | 600 | 620 | 690 | 900 | 840 | 470 | --- | --- | --- | 530 | --- | 400 | 600 |
| Nitrite | 1 | (2) | < 2.0 | <2.0 | <2.0 | <2.0 | <2.0 | < 2.0 | --- | --- | --- | <2.0 | --- | <2.0 | <2.0 |
| Bromide | - | - | 4.5 | 4.10 | 4.60 | 4.80 | 7.90 | 2.2 | --- | --- | --- | 2.40 | --- | 1.90 | 5.40 |
| Nitrate | 10 | (3) | 41 | 43 | 48 | 34 | 37 | 19 | --- | --- | --- | 0.29 | --- | 28 | 23 |
| Phosphorus | - | - | < 10 | <10 | <0.50 | <0.50 | <0.50 | < 10 | --- | --- | --- | <0.50 | --- | <0.50 | <0.50 |
| Sulfate | 600 | (6) | 1400 | 1500 | 1600 | 1700 | 1500 | 2200 | --- | --- | --- | 2100 | --- | 1300 | 1000 |
| Carbon Dioxide ($CO_2$) | - | - | 170 | 160 | 170 | 160 | 150 | 120 | --- | --- | --- | 200 | --- | 130 | 120 |
| Alkalinity ($CaCO_3$) | - | - | 190 | 180 | 180 | 160 | 170 | 130 | --- | --- | --- | 210 | --- | 130 | 130 |
| Bicarbonate ($CaCO_3$) | - | - | 190 | 180 | 180 | 160 | 170 | 130 | --- | --- | --- | 210 | --- | 130 | 130 |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | < 0.020 | <0.020 | <0.0002 | <0.02 | <0.02 | < 0.020 | --- | --- | --- | <0.02 | --- | <0.02 | <0.02 |
| Barium | 1 | (3) | 0.023 | 0.029 | 0.031 | 0.06 | 0.033 | 0.023 | --- | --- | --- | 0.023 | --- | <0.02 | <0.02 |
| Cadmium | 0.005 | (2) | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | --- | --- | <0.002 | --- | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | < 0.0060 | --- | --- | --- | <0.006 | --- | <0.006 | <0.006 |
| Lead | 0.015 | (2) | < 0.0050 | <0.005 | <0.005 | <0.005 | 0.0074 | < 0.0050 | --- | --- | --- | <0.005 | --- | <0.005 | <0.005 |
| Selenium | 0.05 | (2) | < 0.050 | <0.05 | <0.05 | <0.05 | <0.05 | < 0.050 | --- | --- | --- | <0.05 | --- | <0.05 | <0.05 |
| Silver | 0.05 | (3) | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.0050 | --- | --- | --- | <0.005 | --- | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | --- | --- | --- | <0.0002 | --- | <0.0002 | <0.0002 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | 0.0039 | 0.0034 | 0.0044 | <0.02 | <0.02 | 0.0026 | --- | --- | --- | 0.0025 | --- | <0.02 | <0.02 |
| Barium | 1 | (3) | 0.02 | 0.020 | 0.019 | 0.022 | 0.022 | 0.019 | --- | --- | --- | 0.02 | --- | <0.02 | <0.02 |
| Cadmium | 0.01 | (3) | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | --- | --- | <0.002 | --- | <0.002 | <0.002 |
| Calcium | - | - | 310 | 340 | 350 | 360 | 330 | 400 | --- | --- | --- | 410 | --- | 260 | 230 |
| Chromium | 0.05 | (3) | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | < 0.0060 | --- | --- | --- | <0.006 | --- | <0.006 | <0.006 |
| Copper | 1 | (3) | < 0.010 | <0.006 | <0.006 | <0.006 | <0.006 | < 0.020 | --- | --- | --- | <0.006 | --- | <0.006 | <0.006 |
| Iron | 1 | (3) | < 0.020 | <0.020 | <0.02 | <0.02 | <0.02 | < 0.020 | --- | --- | --- | <0.02 | --- | <0.02 | <0.02 |
| Lead | 0.05 | (3) | < 0.0010 | <0.0010 | <0.005 | <0.005 | <0.005 | < 0.0010 | --- | --- | --- | <0.005 | --- | <0.005 | <0.005 |
| Magnesium | - | - | 45 | 47 | 50 | 57 | 52 | 58 | --- | --- | --- | 55 | --- | 39 | 33 |
| Manganese | 0.2 | (3) | < 0.0020 | <0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | --- | --- | 0.083 | --- | <0.002 | <0.002 |
| Mercury | - | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Potassium | - | - | 3.6 | 4.4 | 4.4 | 4.4 | 4.8 | 5.2 | --- | --- | --- | 1.9 | --- | 4.5 | 5.5 |
| Selenium | 0.05 | (3) | 0.028 | <0.050 | 0.031 | <0.05 | <0.05 | 0.05 | --- | --- | --- | 0.024 | --- | <0.05 | <0.05 |
| Silver | 0.05 | (3) | < 0.0050 | <0.0050 | <0.005 | <0.005 | <0.005 | < 0.0050 | --- | --- | --- | <0.005 | --- | <0.005 | <0.005 |
| Sodium | - | - | 700 | 790 | 790 | 910 | 780 | 680 | --- | --- | --- | 780 | --- | 600 | 550 |
| Uranium | 0.03 | (3) | 0.014 | 0.012 | 0.013 | 0.0083 | 0.01 | 0.013 | --- | --- | --- | 0.017 | --- | 0.0064 | 0.006 |
| Zinc | 10 | (3) | < 0.010 | 0.12 | 0.099 | <0.05 | <0.05 | < 0.010 | --- | --- | --- | 0.052 | --- | <0.05 | <0.05 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | < 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 | - | - | < 0.050 | <0.05 | <0.05 | <0.05 | <0.05 | < 0.050 | --- | --- | <0.050 | <0.05 | <0.05 | <0.05 | <0.05 |
| 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 |

**Notes:**
(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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 TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels.
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels.
- = No screening level available.
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time.
--- = Analyte inadvertently not included in sample analysis.
--- = Analysis not required and/or well contains separate phase.
= Analytical result exceeds the respective screening level.

**TABLE 5**
**Downgradient Wells**
**Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-11 | | | | | | MW-12 | | | | | | | | | MW-34 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| **Volatile Organic Compounds (ug/L)** | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 5.24E+00 | (5) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,1,1-Trichloroethane | 6.00E+01 | (3) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,1,2,2-Tetrachloroethane | 1.00E+01 | (3) | < 10 | < 10 | <10 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 |
| 1,1,2-Trichloroethane | 5.00E+00 | (2) | < 5.0 | < 5.0 | <5.0 | < 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-Dichloroethane | 2.50E+01 | (3) | < 5.0 | < 5.0 | <5.0 | < 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-Dichloroethene | 5.00E+00 | (3) | < 5.0 | < 5.0 | <5.0 | < 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-Dichloropropene | - | - | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,2,3-Trichlorobenzene | - | - | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,2,3-Trichloropropane | 9.60E-02 | (5) | < 10 | < 10 | <10 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | <1.0 | <1.0 |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,2,4-Trimethylbenzene | 1.50E+01 | (1) | 270 | 350 | 0.43 | 630 | 670 | 860 | < 1.0 | --- | < 1.0 | --- | <1.0 | --- | <1.0 | <1.0 | <1.0 | < 1.0 | 6.1 | 65 | 44 | 180 | 210 |
| 1,2-Dibromo-3-chloropropane | 2.00E-01 | (2) | < 10 | < 10 | <10 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 |
| 1,2-Dibromoethane (EDB) | 5.00E-02 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,2-Dichloroethane (EDC) | 5.00E+00 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,2-Dichloropropane | 5.00E+00 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,3,5-Trimethylbenzene | 1.20E+01 | (1) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,3-Dichlorobenzene | - | - | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,3-Dichloropropane | 7.30E+02 | (1) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | < 5.0 | < 5.0 | <5.0 | < 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-Methylnaphthalene | 2.30E+00 | (1) | < 20 | < 20 | <20 | 17 | 20 | 18 | < 4.0 | --- | < 4.0 | --- | < 4.0 | --- | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | 4.6 | 4.7 |
| 2,2-Dichloropropane | - | - | < 10 | < 10 | <10 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 |
| 2-Butanone | 7.06E+03 | (5) | < 50 | < 50 | <50 | < 10 | < 10 | < 10 | < 10 | --- | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | <10.0 | <10.0 |
| 2-Chlorotoluene | 7.30E+02 | (1) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 2-Hexanone | - | - | < 50 | < 50 | <50 | < 10 | < 10 | < 10 | < 10 | --- | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | <1.0 | <1.0 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | < 20 | < 20 | 0.028 | 36 | 37 | 28 | < 4.0 | --- | < 4.0 | --- | < 4.0 | --- | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | <4.0 | <4.0 |
| 4-Chlorotoluene | 2.60E+03 | (1) | < 5.0 | < 5.0 | <5.0 | < 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 |
| 4-Isopropyltoluene | - | - | 5.1 | < 5.0 | 0.0054 | 8.3 | 5.9 | 5.2 | < 1.0 | --- | < 1.0 | --- | <1.0 | --- | <1.0 | <1.0 | <1.0 | < 1.0 | < 1.0 | 2.9 | 1.7 | 4.5 | 5.2 |
| 4-Methyl-2-pentanone | - | - | < 50 | < 50 | <50 | < 10 | < 10 | < 10 | < 10 | --- | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | <10.0 | <10.0 |
| Acetone | 2.18E+04 | (5) | < 50 | < 50 | <50 | < 1.0 | < 10 | < 10 | < 10 | --- | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | <10.0 | <10.0 |
| Benzene | 5.00E+00 | (2) | < 5.0 | < 5.0 | 56 | 1.4 | 99 | 3.8 | < 1.0 | < 1.0 | < 1.0 | <1 | <1.0 | --- | <1.0 | <1.0 | <1.0 | < 1.0 | < 1.0 | 20 | < 1.0 | 32 | 3.3 |
| Bromobenzene | 2.00E+01 | (1) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Bromodichloromethane | 1.17E+00 | (5) | < 5.0 | < 5.0 | 0.0054 | < 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 |
| Bromoform | 8.50E+00 | (1) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Bromomethane | 8.66E+00 | (5) | < 15 | < 15 | <5.0 | < 1.0 | < 3.0 | < 3.0 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | <1.0 | <1.0 |
| Carbon disulfide | 1.04E+03 | (5) | < 50 | < 50 | <50 | < 10 | < 10 | < 10 | < 10 | --- | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | <10.0 | <10.0 |
| Carbon Tetrachloride | 5.00E+00 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Chlorobenzene | 1.00E+02 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Chloroethane | - | - | < 10 | < 10 | <10 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 |
| Chloroform | 1.00E+02 | (3) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Chloromethane | 1.78E+01 | (5) | < 15 | < 15 | <5.0 | < 1.0 | < 3.0 | < 3.0 | < 3.0 | --- | < 3.0 | --- | <1.0 | --- | <1.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 2.0 | <1.0 | <1.0 |
| cis-1,2-DCE | 7.00E+01 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| cis-1,3-Dichloropropene | - | - | < 5.0 | < 5.0 | <5.0 | < 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 |
| Dibromochloromethane | 1.47E+00 | (5) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Dibromomethane | 3.70E+02 | (1) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Dichlorodifluoromethane | 3.95E+02 | (5) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Ethylbenzene | 7.00E+02 | (2) | < 5.0 | < 5.0 | <5.0 | 3.8 | 4.0 | 2.2 | < 1.0 | < 1.0 | < 1.0 | <1 | < 1.0 | --- | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | <1.0 | <1.0 |
| Hexachlorobutadiene | 8.60E-01 | (1) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Isopropylbenzene | 6.79E+02 | (5) | 70 | 51 | 0.074 | 71 | 77 | 61 | < 1.0 | --- | < 1.0 | --- | <1.0 | --- | <1.0 | <1.0 | <1.0 | 2.5 | 7.6 | 20 | 19 | 23 | 25 |
| Methyl tert-butyl ether (MTBE) | 1.25E+02 | (5) | 6.2 | 8 | 0.012 | 11 | 14 | 19 | < 1.0 | < 1.0 | < 1.0 | <1 | <1.0 | --- | <1.0 | <1.0 | <1.0 | 1.3 | 2.3 | 3.1 | 2.1 | 4.1 | 2.6 |
| Methylene Chloride | 5.00E+00 | (2) | < 15 | < 15 | <15 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | <3.0 | <3.0 |
| Naphthalene | 1.43E+00 | (5) | 76 | 63 | 0.097 | 110 | 100 | 97 | < 2.0 | --- | < 3.0 | --- | <2.0 | --- | <2.0 | <2.0 | <2.0 | < 2.0 | < 2.0 | 6.2 | 5 | 9.8 | 9.4 |
| n-Butylbenzene | - | - | < 15 | < 15 | <5.0 | 3.3 | 25 | 3.1 | < 3.0 | --- | < 1.0 | --- | <1.0 | --- | <1.0 | <1.0 | <1.0 | < 3.0 | < 3.0 | 1.4 | <1.0 | <1.0 | <1.0 |
| n-Propylbenzene | - | - | 68 | 56 | 0.075 | 73 | 76 | 60 | < 1.0 | --- | < 2.0 | --- | <1.0 | --- | <1.0 | <1.0 | <1.0 | 1.4 | 7.2 | 15 | 11 | 17 | 20 |
| sec-Butylbenzene | - | - | 12 | 9 | 0.012 | 13 | 13 | 12 | < 1.0 | --- | < 1.0 | --- | <1.0 | --- | <1.0 | <1.0 | <1.0 | 1.6 | 4.7 | 7.2 | 6.5 | 8.5 | 9.7 |
| Styrene | 1.00E+02 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| tert-Butylbenzene | - | - | < 5.0 | < 5.0 | <5.0 | 2.9 | 2.6 | 2.7 | < 1.0 | --- | < 1.0 | --- | <1.0 | --- | <1.0 | <1.0 | <1.0 | 2.0 | 1.9 | 2.3 | 2.1 | 2.4 | 2.4 |
| Tetrachloroethene (PCE) | 5.00E+00 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Toluene | 7.50E+02 | (3) | < 5.0 | < 5.0 | <5.0 | < 1.0 | < 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 | < 1.0 | <1.0 | <1.0 |
| trans-1,2-DCE | 1.00E+02 | (2) | < 5.0 | < 5.0 | <5.0 | < 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-1,3-Dichloropropene | 4.30E-01 | (1) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Trichloroethene (TCE) | 5.00E+00 | (2) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Trichlorofluoromethane | 1.29E+03 | (5) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Vinyl chloride | 1.00E+00 | (3) | < 5.0 | < 5.0 | <5.0 | < 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 |
| Xylenes, Total | 6.20E+02 | (3) | < 7.5 | < 7.5 | <7.5 | < 2.0 | < 2.0 | < 1.5 | < 1.5 | <2.0 | < 1.5 | <2 | < 1.5 | --- | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | <1.5 | 1.7 |

**TABLE 5**
**Downgradient Wells**
**Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-11 | | | | | | MW-12 | | | | | | | | | MW-34 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 1,3-Dichlorobenzene | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | 21 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | < 20 | --- | < 20 | --- | < 20 | < 20 | < 20 | --- | --- | --- | < 20 | --- | --- | < 20 | < 20 | --- | --- | --- | --- | <20 | <20 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | < 20 | --- | < 20 | --- | < 20 | < 20 | < 20 | --- | --- | --- | < 20 | --- | --- | < 20 | < 20 | --- | --- | --- | --- | <10 | <10 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2-Chlorophenol | 1.83E+02 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | 14 | --- | < 10 | --- | 19 | 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2-Methylphenol | 1.80E+03 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2-Nitroaniline | 1.10E+02 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 2-Nitrophenol | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 3,3'-Dichlorobenzidine | 1.50E-01 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 3+4-Methylphenol | 1.80E+02 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 3-Nitroaniline | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 4,6-Dinitro-2-methylphenol | - | - | < 20 | --- | < 20 | --- | < 20 | < 20 | < 20 | --- | --- | --- | < 20 | --- | --- | < 20 | < 20 | --- | --- | --- | --- | <20 | <20 |
| 4-Bromophenyl phenyl ether | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 4-Chloro-3-methylphenol | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 4-Chloroaniline | 3.40E-01 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 4-Chlorophenyl phenyl ether | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| 4-Nitroaniline | 3.40E+00 | (1) | < 10 | --- | < 20 | --- | < 20 | < 20 | < 10 | --- | --- | --- | < 20 | --- | --- | < 20 | < 20 | --- | --- | --- | --- | <10 | <10 |
| 4-Nitrophenol | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Acenaphthene | 2.19E+03 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Acenaphthylene | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Aniline | 1.20E+01 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Anthracene | 1.10E+04 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Azobenzene | 1.20E-01 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Benz(a)anthracene | 9.21E-01 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Benzo(a)pyrene | 2.00E-01 | (2) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Benzo(g,h,i)perylene | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Benzoic acid | 1.50E+05 | (1) | 62 | --- | < 20 | --- | < 20 | < 20 | < 40 | --- | --- | --- | < 20 | --- | --- | < 20 | < 20 | --- | --- | --- | --- | <20 | <20 |
| Benzyl alcohol | 1.80E+04 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Carbazole | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Chrysene | 9.21E+01 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Dibenzofuran | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Diethyl phthalate | 2.92E+04 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Dimethyl phthalate | 3.65E+05 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Di-n-octyl phthalate | - | - | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Fluoranthene | 1.46E+03 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Fluorene | 1.46E+03 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Hexachlorobenzene | 1.00E+00 | (2) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Hexachlorobutadiene | 8.60E-01 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Hexachloroethane | 3.65E+01 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Isophorone | 7.07E+02 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Naphthalene | 1.43E+00 | (5) | 54 | --- | < 10 | --- | 32 | 51 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Nitrobenzene | 1.49E+01 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Pentachlorophenol | 1.00E+00 | (2) | < 20 | --- | < 40 | --- | < 40 | < 40 | < 20 | --- | --- | --- | < 40 | --- | --- | < 40 | < 40 | --- | --- | --- | --- | <40 | <40 |
| Phenanthrene | 1.10E+03 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Phenol | 5.00E+00 | (3) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Pyrene | 1.10E+03 | (5) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |
| Pyridine | 3.70E+01 | (1) | < 10 | --- | < 10 | --- | < 10 | < 10 | < 10 | --- | --- | --- | < 10 | --- | --- | < 10 | < 10 | --- | --- | --- | --- | <10 | <10 |

**TABLE 5**
**Downgradient Wells**
**Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-11 | | | | | | MW-12 | | | | | | | | | MW-24 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-09 | Aug-08 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | 0.84 | 0.52 | 0.59 | <0.50 | 0.38 | 0.57 | 0.55 | --- | 0.46 | --- | 0.49 | --- | 0.55 | 0.44 | 0.5 | 1.1 | 0.92 | 0.84 | 0.65 | 0.61 | 0.83 |
| Chloride | 250 | (3) | 300 | 370 | 340 | 300 | 330 | 110 | 4.0 | --- | 53 | --- | 4 | --- | 6 | 15 | 8 | 230 | 270 | 240 | 200 | 180 | 110 |
| Nitrite | 1.0 | (2) | < 0.50 | < 0.50 | <0.50 | <0.50 | <0.20 | <1.0 | < 0.10 | --- | < 0.1 | --- | <0.10 | --- | <0.10 | <0.10 | <0.10 | < 0.50 | < 0.50 | <0.50 | <2.0 | <2.0 | <0.10 |
| Bromide | - | - | 3.9 | 4.4 | 4.30 | 3.90 | 4.00 | 1.40 | < 0.10 | --- | 0.25 | --- | <0.10 | --- | <0.10 | 0.25 | <0.10 | 2.9 | 2.9 | 2.80 | 2.10 | 2.20 | 1.30 |
| Nitrite | 10 | (3) | < 0.50 | < 0.5 | <0.5 | <0.5 | <0.10 | <0.10 | < 0.10 | --- | 0.78 | --- | <0.10 | --- | 0.22 | <0.10 | <0.10 | < 0.50 | < 0.50 | <0.50 | 1.20 | <0.10 | <0.10 |
| Phosphorus | - | - | < 2.5 | < 2.5 | <2.5 | <2.5 | <0.50 | <0.50 | < 0.50 | --- | < 0.5 | --- | <0.50 | --- | <0.50 | <0.50 | <0.50 | < 2.5 | < 2.5 | <2.5 | <0.50 | <0.50 | <0.50 |
| Sulfate | 600 | (6) | 4.6 | 13 | 5.10 | 5.30 | 4 | 1.10 | 67 | --- | 240 | --- | 63 | --- | 69 | 600 | 130 | 9.1 | 83 | 22 | 320 | 18 | 9.90 |
| Carbon Dioxide ($CO_2$) | - | - | 1100 | 1000 | 960 | 970 | 1100 | 1100 | 200 | --- | 170 | --- | 190 | --- | 210 | 300 | 270 | 950 | 980 | 840 | 760 | 850 | 740 |
| Alkalinity ($CaCO_3$) | - | - | 1100 | 1100 | 1000 | 970 | 980 | 1100 | 220 | --- | 190 | --- | 220 | --- | 210 | 320 | 280 | 1000 | 1000 | 910 | 760 | 880 | 750 |
| Bicarbonate ($CaCO_3$) | - | - | 1100 | 1100 | 1000 | 970 | 980 | 1100 | 220 | --- | 190 | --- | 220 | --- | 210 | 320 | 280 | 1000 | 1000 | 910 | 760 | 880 | 750 |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | < 0.020 | < 0.02 | <0.02 | 0.033 | <0.02 | <0.02 | < 0.020 | --- | <0.02 | --- | <0.02 | --- | 0.021 | <0.02 | <0.02 | < 0.020 | < 0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Barium | 1 | (3) | 1.1 | 0.84 | 0.98 | 1.1 | 0.92 | 0.7 | 0.071 | --- | 0.090 | --- | 0.064 | --- | 0.21 | 0.17 | 0.06 | 0.79 | 1.10 | 0.76 | 0.38 | 0.71 | 0.57 |
| Cadmium | 0.005 | (2) | < 0.0020 | < 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | <0.002 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 | < 0.0020 | < 0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | < 0.0060 | < 0.006 | <0.006 | <0.006 | 0.009 | 0.009 | 0.29 | --- | 0.29 | --- | 0.38 | --- | 2.1 | 0.69 | 0.011 | < 0.0060 | < 0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Lead | 0.015 | (2) | < 0.025 | 0.013 | 0.016 | 0.016 | 0.011 | 0.0074 | < 0.025 | --- | 0.024 | --- | 0.018 | --- | 0.044 | 0.081 | <0.005 | < 0.025 | < 0.005 | <0.005 | <0.005 | 0.0073 | <0.005 |
| Selenium | 0.05 | (2) | < 0.050 | < 0.05 | <0.05 | <0.05 | <0.050 | <0.25 | < 0.050 | --- | <0.05 | --- | <0.05 | --- | <0.05 | <0.050 | <0.050 | < 0.050 | < 0.05 | <0.05 | <0.05 | <0.050 | <0.25 |
| Silver | 0.05 | (3) | < 0.025 | < 0.005 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.025 | --- | <0.005 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.025 | < 0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | < 0.00020 | < 0.0002 | <0.0002 | 0.0002 | <0.0002 | <0.0002 | < 0.00020 | --- | <0.0002 | --- | <0.0002 | --- | 0.0002 | <0.0002 | <0.0002 | < 0.00020 | < 0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | 0.02 | 0.015 | 0.0061 | <0.02 | <0.02 | <0.02 | < 0.0010 | --- | <0.001 | --- | <0.001 | --- | <0.02 | <0.02 | <0.02 | 0.0049 | 0.01 | 0.0041 | <0.02 | <0.02 | <0.02 |
| Barium | 1 | (3) | 1.1 | 0.93 | 0.85 | 1.1 | 0.87 | 0.7 | 0.043 | --- | 0.035 | --- | 0.033 | --- | 0.043 | 0.066 | 0.06 | 0.81 | 1.2 | 0.71 | 0.52 | 0.65 | 0.57 |
| Cadmium | 0.01 | (3) | < 0.0020 | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | <0.002 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 | < 0.0020 | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 |
| Calcium | - | - | 130 | 140 | 140 | 130 | 120 | --- | 59 | --- | 50 | --- | 50 | --- | 50 | 100 | --- | 130 | 140 | 120 | 78 | 99 | --- |
| Chromium | 0.05 | (3) | < 0.0060 | < 0.0060 | <0.006 | <0.006 | <0.006 | 0.009 | 0.021 | --- | 0.0099 | --- | 0.0064 | --- | <0.006 | 0.013 | 0.011 | < 0.0060 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 |
| Copper | 1 | (3) | < 0.020 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | < 0.020 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 | < 0.020 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 |
| Iron | 1 | (3) | 11 | 9.3 | 12 | 14 | 12 | 12 | 0.54 | --- | 0.069 | --- | 0.095 | --- | 0.061 | 0.26 | 0.021 | 3.2 | 6 | 4 | 3.1 | 3.6 | 4.1 |
| Lead | 0.05 | (3) | 0.0042 | 0.0015 | <0.005 | 0.0054 | 0.007 | 0.007 | 0.0018 | --- | < 0.001 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.0010 | < 0.0010 | <0.005 | <0.005 | <0.005 | <0.005 |
| Magnesium | - | - | 28 | 31 | 31 | 28 | 27 | --- | 9.6 | --- | 8.2 | --- | 8.9 | --- | 8.9 | 21 | --- | 23 | 26 | 23 | 15 | 19 | --- |
| Manganese | 0.2 | (3) | 2.3 | 2.2 | 2.2 | 2.1 | 2.3 | 1.9 | 0.039 | --- | 0.016 | --- | 0.031 | --- | 0.15 | 0.34 | 0.065 | 4.2 | 5.6 | 4.4 | 3.2 | 3.8 | 3.1 |
| Mercury | - | - | < 0.00020 | --- | --- | --- | --- | --- | < 0.00020 | --- | --- | --- | --- | --- | --- | --- | --- | < 0.00020 | --- | --- | --- | --- | --- |
| Potassium | - | - | 2.4 | 2.4 | 2.0 | 1.9 | 1.6 | --- | < 1.0 | --- | < 1 | --- | <1.0 | --- | <1.0 | <1.0 | --- | 1.8 | 1.9 | 1.5 | 1.2 | 1.3 | --- |
| Selenium | 0.05 | (3) | < 0.020 | < 0.010 | 0.014 | <0.05 | <0.05 | <0.25 | < 0.020 | --- | < 0.001 | --- | 0.0019 | --- | <0.05 | <0.05 | <0.25 | < 0.020 | < 0.010 | 0.0088 | <0.05 | <0.05 | <0.25 |
| Silver | 0.05 | (3) | < 0.025 | < 0.005 | <0.005 | <0.005 | <0.005 | <0.005 | < 0.025 | --- | < 0.005 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.025 | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 |
| Sodium | - | - | 440 | 480 | 460 | 450 | 420 | --- | 55 | --- | 47 | --- | 62 | --- | 66 | 260 | --- | 410 | 430 | 390 | 320 | 350 | --- |
| Uranium | 0.03 | (3) | <0.001 | 0.0017 | <0.001 | <0.001 | <0.001 | <0.001 | 0.0016 | --- | < 0.001 | --- | 0.0016 | --- | 0.0012 | 0.008 | 0.003 | <0.001 | 0.0011 | <0.0010 | <0.001 | <0.001 | <0.001 |
| Zinc | 10 | (3) | < 0.010 | 0.16 | 0.072 | <0.05 | <0.05 | <0.05 | < 0.010 | --- | 0.066 | --- | 0.082 | --- | <0.05 | <0.05 | 0.095 | < 0.010 | 0.074 | 0.045 | <0.05 | <0.05 | <0.05 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | 2.5 | 1.1 | 0.83 | 2.0 | 12 | 9.6 | < 0.20 | < 0.20 | <0.20 | <0.2 | <0.20 | <0.20 | <0.20 | <1.0 | 0.3 | 1.8 | 0.91 | 1.2 | 1.0 | 9.5 | 3.9 |
| Gasoline Range Organics | - | - | 2.1 | 0.82 | 1.7 | 2.2 | 1.9 | 3.4 | < 0.050 | < 0.050 | <0.05 | <0.05 | <0.05 | <0.050 | <0.05 | <0.005 | <0.05 | 1.1 | 0.71 | 0.87 | 0.7 | 0.74 | 1.4 |
| Motor Oil Range Organics | - | - | < 2.5 | < 2.5 | <2.5 | <2.5 | <5.0 | <5.0 | < 2.5 | < 2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <5.0 | <2.5 | < 2.5 | < 2.5 | <2.5 | <2.5 | <5.0 | <5.0 |

**Notes:**

(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels Tap Water.
(2) EPA - Regional Screening Levels (April 2009) - 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 TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels

- = No screening level available
° = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
--- = Analyte inadvertently not included in sample analysis.
--- = Analysis not required and/or well contains separate phase
= Organic Analysis

**TABLE 5**
**Downgradient Wells**
**Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-35 | | | | | | | | | MW-37 | | | | | | | | | MW-38 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 |
| **Volatile Organic Compounds (ug/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 5.24E+00 | (5) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane | 6.00E+01 | (3) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 1.00E+01 | (3) | < 2.0 | --- | < 2.0 | --- | < 20 | --- | < 2.0 | < 2.0 | <4.0 | < 2.0 | --- | < 4.0 | --- | < 20 | --- | < 20 | < 2.0 | < 2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <10 | < 2.0 | < 2.0 |
| 1,1,2-Trichloroethane | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 2.50E+01 | (3) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5.00E+00 | (3) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene | - | - | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichlorobenzene | - | - | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichloropropane | 9.60E-02 | (5) | < 2.0 | --- | < 2.0 | --- | < 20 | --- | < 2.0 | < 2.0 | <4.0 | < 2.0 | --- | < 4.0 | --- | < 20 | --- | < 20 | < 2.0 | < 2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <10 | < 2.0 | < 2.0 |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,2,4-Trimethylbenzene | 1.50E+01 | (1) | 3.0 | --- | 46 | --- | 37 | --- | 160 | 54 | 100 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | <1.0 | --- | <5.0 | <1.0 | <1.0 |
| 1,2-Dibromo-3-chloropropane | 2.00E-01 | (2) | < 2.0 | --- | < 2.0 | --- | < 20 | --- | < 2.0 | < 2.0 | <4.0 | < 2.0 | --- | < 4.0 | --- | < 20 | --- | < 20 | < 2.0 | < 2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <10 | < 2.0 | < 2.0 |
| 1,2-Dibromoethane (EDB) | 5.00E-02 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane (EDC) | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,3,5-Trimethylbenzene | 1.20E+01 | (1) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,3-Dichlorobenzene | - | - | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane | 7.30E+02 | (1) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | < 4.0 | --- | < 4.0 | --- | < 40 | --- | < 4.0 | < 4.0 | <8.0 | < 4.0 | --- | < 8.0 | --- | < 40 | --- | < 40 | < 4.0 | < 4.0 | < 4.0 | --- | < 4.0 | --- | < 4.0 | --- | <20 | < 4.0 | < 4.0 |
| 2,2-Dichloropropane | - | - | < 2.0 | --- | < 2.0 | --- | < 20 | --- | < 2.0 | < 2.0 | <4.0 | < 2.0 | --- | < 4.0 | --- | < 20 | --- | < 20 | < 2.0 | < 2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <10 | < 2.0 | < 2.0 |
| 2-Butanone | 7.06E+03 | (5) | < 10 | --- | < 10 | --- | < 100 | --- | < 10 | < 10 | <20.0 | < 10 | --- | < 20 | --- | < 100 | --- | < 100 | < 10 | < 10 | < 10 | --- | < 10 | --- | < 10 | --- | <50 | < 10 | < 10 |
| 2-Chlorotoluene | 7.30E+02 | (1) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 2-Hexanone | - | - | < 10 | --- | < 10 | --- | < 100 | --- | < 10 | < 10 | <20.0 | < 10 | --- | < 20 | --- | < 100 | --- | < 100 | < 10 | < 10 | < 10 | --- | < 10 | --- | < 10 | --- | <50 | < 10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | < 4.0 | --- | < 4.0 | --- | < 40 | --- | < 4.0 | < 4.0 | <8.0 | < 4.0 | --- | < 8.0 | --- | < 40 | --- | < 40 | < 4.0 | < 4.0 | < 4.0 | --- | < 4.0 | --- | < 4.0 | --- | <20 | < 4.0 | < 4.0 |
| 4-Chlorotoluene | 2.60E+03 | (1) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| 4-Isopropyltoluene | - | - | < 1.0 | --- | 1.8 | --- | < 10 | --- | 3.8 | 1.7 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | <1.0 | --- | <5.0 | <1.0 | <1.0 |
| 4-Methyl-2-pentanone | - | - | < 10 | --- | < 10 | --- | < 100 | --- | < 10 | < 10 | <20.0 | < 10 | --- | < 20 | --- | < 100 | --- | < 100 | < 10 | < 10 | < 10 | --- | < 10 | --- | < 10 | --- | <50 | < 10 | < 10 |
| Acetone | 2.18E+04 | (5) | < 10 | --- | 10 | --- | < 100 | --- | < 10 | < 10 | <20.0 | < 10 | --- | < 20 | --- | < 100 | --- | < 100 | < 10 | < 10 | < 10 | --- | < 10 | --- | < 10 | --- | <50 | < 10 | < 10 |
| Benzene | 5.00E+00 | (2) | < 1.0 | < 1.0 | < 1.0 | <10 | < 10 | <10 | <1.0 | <1.0 | <2.0 | < 1.0 | < 1.0 | < 2.0 | <10 | < 10 | --- | < 10 | <1.0 | <1.0 | < 1.0 | <5.0 | < 1.0 | <1.0 | <1.0 | --- | <5.0 | <1.0 | <1.0 |
| Bromobenzene | 2.00E+01 | (1) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Bromodichloromethane | 1.17E+00 | (5) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Bromoform | 8.50E+00 | (1) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Bromomethane | 8.66E+00 | (5) | < 3.0 | --- | < 3.0 | --- | < 30 | --- | < 3.0 | < 3.0 | <2.0 | < 3.0 | --- | < 6.0 | --- | < 30 | --- | < 30 | < 3.0 | < 3.0 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | <5.0 | < 3.0 | < 3.0 |
| Carbon disulfide | 1.04E+03 | (5) | < 10 | --- | < 10 | --- | < 100 | --- | < 10 | < 10 | <20.0 | < 10 | --- | < 20 | --- | < 100 | --- | < 100 | < 10 | < 10 | < 10 | --- | < 10 | --- | < 10 | --- | <50 | < 10 | < 10 |
| Carbon Tetrachloride | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 1.00E+02 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Chloroethane | - | - | < 2.0 | --- | < 2.0 | --- | < 20 | --- | < 2.0 | < 2.0 | <4.0 | < 2.0 | --- | < 4.0 | --- | < 20 | --- | < 20 | < 2.0 | < 2.0 | < 2.0 | --- | < 2.0 | --- | < 2.0 | --- | <10 | < 2.0 | < 2.0 |
| Chloroform | 1.00E+02 | (3) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Chloromethane | 1.78E+01 | (5) | < 3.0 | --- | < 3.0 | --- | < 30 | --- | < 3.0 | < 3.0 | <2.0 | < 3.0 | --- | < 6.0 | --- | < 30 | --- | < 30 | < 3.0 | < 3.0 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | <5.0 | < 3.0 | < 3.0 |
| cis-1,2-DCE | 7.00E+01 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| cis-1,3-Dichloropropene | - | - | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Dibromochloromethane | 1.47E+00 | (5) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Dibromomethane | 3.70E+02 | (1) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane | 3.95E+02 | (5) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Ethylbenzene | 7.00E+02 | (2) | < 1.0 | < 1.0 | < 1.0 | <10 | < 10 | <10 | < 1.0 | < 1.0 | <2.0 | < 1.0 | < 1.0 | < 2.0 | <10 | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | <5.0 | < 1.0 | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Hexachlorobutadiene | 8.60E-01 | (1) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Isopropylbenzene | 6.79E+02 | (5) | 2.2 | --- | 2.2 | --- | < 10 | --- | 12 | 6.8 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | <1.0 | --- | <5.0 | <1.0 | <1.0 |
| Methyl tert-butyl ether (MTBE) | 1.25E+02 | (5) | 1.4 | 1 | 1.5 | <10 | < 10 | <10 | 1.6 | 2.5 | <2.0 | < 1.0 | < 1.0 | < 2.0 | <10 | < 10 | --- | < 10 | <1.0 | <1.0 | < 1.0 | <5.0 | 1.1 | 1.2 | 1.6 | --- | <5.0 | <1.0 | 2.2 |
| Methylene Chloride | 5.00E+00 | (2) | < 3.0 | --- | < 3.0 | --- | < 30 | --- | < 3.0 | < 3.0 | <6.0 | < 3.0 | --- | < 6.0 | --- | < 30 | --- | < 30 | < 3.0 | < 3.0 | < 3.0 | --- | < 3.0 | --- | < 3.0 | --- | <15 | < 3.0 | < 3.0 |
| Naphthalene | 1.43E+00 | (5) | < 2.0 | --- | 2.6 | --- | < 20 | --- | 4.6 | 3 | <4.0 | < 2.0 | --- | < 6.0 | --- | < 20 | --- | < 20 | <2.0 | <2.0 | < 2.0 | --- | < 3.0 | --- | <2.0 | --- | <50 | <2.0 | <2.0 |
| n-Butylbenzene | - | - | < 3.0 | --- | < 3.0 | --- | < 10 | --- | 1.4 | 1.2 | <2.0 | < 3.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | <1.0 | <1.0 | < 3.0 | --- | < 1.0 | --- | <1.0 | --- | <5.0 | <1.0 | <1.0 |
| n-Propylbenzene | - | - | 1.4 | --- | 1.4 | --- | < 10 | --- | 7.4 | 4.3 | <2.0 | < 1.0 | --- | < 4.0 | --- | < 10 | --- | < 10 | <1.0 | <1.0 | < 1.0 | --- | < 2.0 | --- | <1.0 | --- | <5.0 | <1.0 | <1.0 |
| sec-Butylbenzene | - | - | 1.5 | --- | 1.2 | --- | < 10 | --- | 4.3 | 3.1 | 2.6 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | <1.0 | --- | <5.0 | <1.0 | <1.0 |
| Styrene | 1.00E+02 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| tert-Butylbenzene | - | - | 2.4 | --- | 1.4 | --- | < 10 | --- | 2.5 | 2.1 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | <1.0 | <1.0 | < 1.0 | --- | < 1.0 | --- | <1.0 | --- | <5.0 | <1.0 | <1.0 |
| Tetrachloroethene (PCE) | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Toluene | 7.50E+02 | (3) | < 1.0 | < 1.0 | < 1.0 | <10 | < 10 | <10 | < 1.0 | < 1.0 | <2.0 | < 1.0 | < 1.0 | < 2.0 | <10 | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | <5.0 | < 1.0 | <1.0 | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| trans-1,2-DCE | 1.00E+02 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 4.30E-01 | (1) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Trichloroethene (TCE) | 5.00E+00 | (2) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Trichlorofluoromethane | 1.29E+03 | (5) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Vinyl chloride | 1.00E+00 | (3) | < 1.0 | --- | < 1.0 | --- | < 10 | --- | < 1.0 | < 1.0 | <2.0 | < 1.0 | --- | < 2.0 | --- | < 10 | --- | < 10 | < 1.0 | < 1.0 | < 1.0 | --- | < 1.0 | --- | < 1.0 | --- | <5.0 | < 1.0 | < 1.0 |
| Xylenes, Total | 6.20E+02 | (3) | < 1.5 | <2.0 | < 1.5 | <20 | < 15 | <20 | < 1.5 | < 1.5 | <3.0 | < 1.5 | <2.0 | < 3.0 | <20 | < 15 | --- | < 15 | < 1.5 | < 1.5 | < 1.5 | <10 | < 1.5 | <2.0 | < 1.5 | --- | <7.5 | < 1.5 | < 1.5 |

**TABLE 5**
**Downgradient Wells**
**Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-35 | | | | | | | | | MW-37 | | | | | | | | | MW-38 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 1,3-Dichlorobenzene | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <20 | <20 | --- | --- | --- | --- | --- | --- | --- | <20 | < 20 | < 20 | --- | --- | --- | <20 | --- | --- | <20 | < 20 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <20 | <20 | --- | --- | --- | --- | --- | --- | --- | <20 | < 20 | < 20 | --- | --- | --- | <20 | --- | --- | <20 | < 20 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2-Chlorophenol | 1.83E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2-Methylphenol | 1.80E+03 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2-Nitroaniline | 1.10E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 2-Nitrophenol | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 3,3'-Dichlorobenzidine | 1.50E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 3+4-Methylphenol | 1.80E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 3-Nitroaniline | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 4,6-Dinitro-2-methylphenol | - | - | --- | --- | --- | --- | --- | --- | --- | <20 | <20 | --- | --- | --- | --- | --- | --- | --- | <20 | < 20 | < 20 | --- | --- | --- | <20 | --- | --- | <20 | < 20 |
| 4-Bromophenyl phenyl ether | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 4-Chloro-3-methylphenol | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 4-Chloroaniline | 3.40E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 4-Chlorophenyl phenyl ether | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| 4-Nitroaniline | 3.40E+00 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 20 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 20 |
| 4-Nitrophenol | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Acenaphthene | 2.19E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Acenaphthylene | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Aniline | 1.20E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Anthracene | 1.10E+04 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Azobenzene | 1.20E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Benz(a)anthracene | 9.21E-01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Benzo(a)pyrene | 2.00E-01 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Benzo(g,h,i)perylene | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | <20 | <20 | --- | --- | --- | --- | --- | --- | --- | <20 | < 10 | < 10 | --- | --- | --- | <20 | --- | --- | <20 | < 10 |
| Benzoic acid | 1.50E+05 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 20 | < 40 | --- | --- | --- | <10 | --- | --- | <10 | < 20 |
| Benzyl alcohol | 1.80E+04 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Carbazole | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Chrysene | 9.21E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Dibenzofuran | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Diethyl phthalate | 2.92E+04 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Dimethyl phthalate | 3.65E+05 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Di-n-octyl phthalate | - | - | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Fluoranthene | 1.46E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Fluorene | 1.46E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Hexachlorobenzene | 1.00E+00 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Hexachlorobutadiene | 8.60E-01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Hexachloroethane | 3.65E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Isophorone | 7.07E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Naphthalene | 1.43E+00 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Nitrobenzene | 1.49E+01 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Pentachlorophenol | 1.00E+00 | (2) | --- | --- | --- | --- | --- | --- | --- | <40 | <40 | --- | --- | --- | --- | --- | --- | --- | <40 | < 40 | < 20 | --- | --- | --- | <40 | --- | --- | <40 | < 40 |
| Phenanthrene | 1.10E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Phenol | 5.00E+00 | (3) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Pyrene | 1.10E+03 | (5) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |
| Pyridine | 3.70E+01 | (1) | --- | --- | --- | --- | --- | --- | --- | <10 | <10 | --- | --- | --- | --- | --- | --- | --- | <10 | < 10 | < 10 | --- | --- | --- | <10 | --- | --- | <10 | < 10 |

**TABLE 5**
**Downgradient Wells**
**Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-35 | | | | | | | | | MW-37 | | | | | | | | | MW-38 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Aug-09 | Aug-08 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | 1.1 | --- | 0.77 | --- | 0.61 | --- | 0.54 | 0.64 | 0.76 | 0.67 | --- | 0.66 | --- | 0.71 | --- | 0.73 | 0.77 | 0.79 | 0.72 | --- | 0.65 | --- | 0.72 | --- | 0.77 | 0.84 | 0.78 |
| Chloride | 250 | (3) | 260 | --- | 240 | --- | 180 | --- | 170 | 98 | 110 | 260 | --- | 280 | --- | 310 | --- | 320 | 280 | 230 | 160 | --- | 110 | --- | 86 | --- | 79 | 64 | 60 |
| Nitrite | 1.0 | (2) | < 0.50 | --- | < 0.5 | --- | <0.50 | --- | 1 | *<1.0 | <0.1 | < 0.10 | --- | < 0.5 | --- | <2.0 | --- | <2.0 | *<1.0 | <0.10 | < 0.10 | --- | < 0.5 | --- | <0.10 | --- | <0.10 | *<1.0 | <0.10 |
| Bromide | - | - | 3.3 | --- | 3.0 | --- | 2.10 | --- | 1.90 | 1.10 | 1.30 | 3 | --- | 3.5 | --- | 3.50 | --- | 3.40 | 2.50 | 2.90 | 2 | --- | 1.4 | --- | 0.73 | --- | 0.91 | 0.70 | 0.67 |
| Nitrite | 10 | (3) | < 0.50 | --- | < 0.5 | --- | <0.50 | --- | <0.50 | *<1.0 | <0.10 | 0.44 | --- | < 0.5 | --- | 7.30 | --- | 0.40 | *<1.0 | <0.10 | < 0.10 | --- | < 0.5 | --- | <0.10 | --- | 0.12 | *<1.0 | <0.10 |
| Phosphorus | - | - | < 2.5 | --- | < 2.5 | --- | <2.5 | --- | <2.5 | <0.50 | <0.50 | < 0.50 | --- | < 2.5 | --- | <0.50 | --- | <0.50 | <0.50 | <0.50 | < 0.50 | --- | < 2.5 | --- | <0.50 | --- | <0.50 | <0.50 | <0.50 |
| Sulfate | 600 | (6) | < 2.5 | --- | 11 | --- | 3.50 | --- | 3.1 | 10.0 | 3.6 | 180 | --- | 69 | --- | 29.0 | --- | 16 | 37 | 34 | 36 | --- | 19 | --- | 49 | --- | 33 | 68 | 150 |
| Carbon Dioxide ($CO_2$) | - | - | 950 | --- | 850 | --- | 760 | --- | 760 | 670 | 830 | 790 | --- | 830 | --- | 770 | --- | 800 | 740 | 760 | 620 | --- | 570 | --- | 530 | --- | 590 | 530 | 570 |
| Alkalinity ($CaCO_3$) | - | - | 1000 | --- | 900 | --- | 820 | --- | 760 | 710 | 870 | 870 | --- | 920 | --- | 860 | --- | 800 | 810 | 820 | 680 | --- | 630 | --- | 590 | --- | 590 | 580 | 600 |
| Bicarbonate ($CaCO_3$) | - | - | 1000 | --- | 900 | --- | 820 | --- | 760 | 710 | 870 | 870 | --- | 920 | --- | 860 | --- | 800 | 810 | 820 | 680 | --- | 630 | --- | 590 | --- | 590 | 580 | 600 |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | < 0.020 | --- | 0.57 | --- | <0.02 | --- | 0.075 | <0.02 | <0.02 | < 0.020 | --- | <0.02 | --- | <0.02 | --- | <0.02 | <0.02 | <0.02 | < 0.020 | --- | <0.02 | --- | <0.02 | --- | <0.02 | <0.02 | <0.02 |
| Barium | 1 | (3) | 1.1 | --- | 1.9 | --- | 0.92 | --- | 0.99 | 0.54 | 0.65 | 0.71 | --- | 0.600 | --- | 0.44 | --- | 0.9 | 0.7 | 0.43 | 0.37 | --- | 0.62 | --- | 0.27 | --- | 0.42 | 0.18 | 0.17 |
| Cadmium | 0.005 | (2) | < 0.0020 | --- | <0.002 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | <0.002 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | <0.002 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | < 0.0060 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 | 0.026 | --- | < 0.006 | --- | 0.0073 | --- | <0.006 | <0.006 | <0.006 | < 0.0060 | --- | 0.023 | --- | 0.0089 | --- | <0.006 | <0.006 | <0.006 |
| Lead | 0.015 | (2) | < 0.025 | --- | 0.0072 | --- | 0.008 | --- | 0.0062 | 0.011 | <0.005 | < 0.025 | --- | < 0.005 | --- | <0.005 | --- | <0.005 | 0.0065 | <0.005 | < 0.025 | --- | 0.020 | --- | 0.0054 | --- | <0.005 | 0.009 | <0.005 |
| Selenium | 0.05 | (2) | < 0.050 | --- | <0.05 | --- | <0.05 | --- | <0.05 | <0.05 | <0.25 | < 0.050 | --- | <0.05 | --- | <0.05 | --- | <0.05 | <0.25 | <0.25 | < 0.050 | --- | <0.05 | --- | <0.05 | --- | <0.05 | <0.25 | <0.050 |
| Silver | 0.05 | (3) | < 0.025 | --- | <0.005 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.025 | --- | <0.005 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.025 | --- | < 0.025 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | < 0.00020 | --- | <0.0002 | --- | <0.0002 | --- | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | --- | <0.0002 | --- | <0.0002 | --- | 0.00056 | <0.0002 | <0.0002 | < 0.00020 | --- | <0.0002 | --- | <0.0002 | --- | 0.0004 | <0.0002 | <0.0002 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | 0.0096 | --- | 0.043 | --- | 0.0063 | --- | <0.10 | <0.2 | <0.02 | 0.0056 | --- | 0.0033 | --- | 0.0042 | --- | <0.02 | <0.02 | <0.02 | 0.004 | --- | 0.001 | --- | 0.0023 | --- | <0.02 | <0.10 | <0.02 |
| Barium | 1 | (3) | 0.93 | --- | 1.7 | --- | 0.84 | --- | 0.75 | 0.39 | 0.65 | 0.35 | --- | 0.45 | --- | 0.34 | --- | 0.45 | 0.43 | 0.43 | 0.28 | --- | 0.21 | --- | 0.23 | --- | 0.25 | 0.11 | 0.17 |
| Cadmium | 0.01 | (3) | < 0.0020 | --- | <0.002 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | <0.002 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 | < 0.0020 | --- | <0.002 | --- | <0.002 | --- | <0.002 | <0.002 | <0.002 |
| Calcium | - | - | 140 | --- | 130 | --- | 110 | --- | 95 | 73 | --- | 120 | --- | 100 | --- | 110 | --- | 99 | 82 | --- | 120 | --- | 100 | --- | 90 | --- | 88 | 91 | --- |
| Chromium | 0.05 | (3) | < 0.0060 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 | < 0.0060 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 | < 0.0060 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 |
| Copper | 1 | (3) | < 0.020 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 | < 0.020 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 | < 0.010 | --- | <0.006 | --- | <0.006 | --- | <0.006 | <0.006 | <0.006 |
| Iron | 1 | (3) | 4.4 | --- | 3.6 | --- | 4.1 | --- | 3.9 | 3.1 | 2.6 | < 0.0010 | --- | 0.77 | --- | 2.6 | --- | 1.9 | 1.1 | 0.95 | 3.1 | --- | 0.75 | --- | 3 | --- | 2.1 | 2.5 | 2.2 |
| Lead | 0.05 | (3) | < 0.0010 | --- | < 0.001 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | 3.0 | --- | < 0.001 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.0010 | --- | < 0.001 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 |
| Magnesium | - | - | 25 | --- | 23 | --- | 19 | --- | 17 | 13 | --- | 21 | --- | 20 | --- | 21 | --- | 20 | 18 | --- | 18 | --- | 17 | --- | 15 | --- | 14 | 16 | --- |
| Manganese | 0.2 | (3) | 3.1 | --- | 3.10 | --- | 2.5 | --- | 2.7 | 1.6 | 1.4 | 1.2 | --- | 0.970 | --- | 1.1 | --- | 1.3 | 1.4 | 1.2 | 2.5 | --- | 1.5 | --- | 2.3 | --- | 2.3 | 1.6 | 2.6 |
| Mercury | - | - | < 0.00020 | --- | --- | --- | --- | --- | --- | --- | --- | < 0.00020 | --- | --- | --- | --- | --- | --- | --- | --- | < 0.00020 | --- | --- | --- | --- | --- | --- | --- | --- |
| Potassium | - | - | 3.2 | --- | 3.6 | --- | 2.8 | --- | 2.6 | 2.3 | --- | 3.7 | --- | 4 | --- | 3.6 | --- | 3.3 | 2.9 | --- | 3.1 | --- | 3.4 | --- | 2.6 | --- | 2.4 | 3.3 | --- |
| Selenium | 0.05 | (3) | < 0.020 | --- | < 0.01 | --- | 0.0069 | --- | <0.05 | <0.05 | <0.25 | < 0.020 | --- | < 0.01 | --- | 0.011 | --- | <0.05 | <0.05 | <0.25 | < 0.010 | --- | < 0.005 | --- | 0.0036 | --- | <0.05 | <0.05 | <0.25 |
| Silver | 0.05 | (3) | < 0.025 | --- | <0.005 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.025 | --- | <0.005 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 | < 0.025 | --- | <0.005 | --- | <0.005 | --- | <0.005 | <0.005 | <0.005 |
| Sodium | - | - | 390 | --- | 390 | --- | 340 | --- | 330 | 270 | --- | 440 | --- | 450 | --- | 440 | --- | 410 | 370 | --- | 240 | --- | 230 | --- | 210 | --- | 210 | 210 | --- |
| Uranium | 0.03 | (3) | <0.0010 | --- | 0.01 | --- | <0.001 | --- | <0.001 | <0.001 | <0.001 | 0.0023 | --- | 0.003 | --- | 0.0018 | --- | <0.001 | <0.001 | <0.001 | 0.0048 | --- | 0.006 | --- | 0.0026 | --- | 0.0015 | 0.003 | 0.002 |
| Zinc | 10 | (3) | < 0.010 | --- | 0.068 | --- | 0.03 | --- | <0.05 | <0.05 | <0.05 | < 0.010 | --- | 0.042 | --- | 0.087 | --- | <0.05 | <0.05 | 0.15 | < 0.010 | --- | 0.056 | --- | 0.068 | --- | <0.05 | <0.05 | <0.05 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | 2.4 | --- | 0.44 | --- | 0.89 | --- | 0.52 | 2.9 | 0.74 | < 0.20 | < 0.2 | < 0.2 | <0.20 | 0.35 | <0.20 | 2.1 | 0.33 | 0.47 | 0.53 | 0.56 | <0.20 | 0.81 | 0.21 | <0.20 | <1.0 | 0.33 | 0.42 |
| Gasoline Range Organics | - | - | 0.85 | --- | 0.35 | --- | 0.97 | --- | 0.58 | 0.84 | 0.53 | < 0.050 | <0.050 | <0.05 | <0.50 | <0.05 | <0.05 | <0.05 | 0.79 | 0.075 | 0.12 | 0.11 | <0.05 | 0.067 | <0.05 | 0.079 | <0.05 | 0.075 | <0.05 |
| Motor Oil Range Organics | - | - | < 2.5 | --- | <2.5 | --- | <2.5 | --- | <2.5 | <5.0 | <2.5 | < 2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <5.0 | <2.5 | <2.5 | < 2.5 | < 2.5 | <2.5 | <2.5 | <2.5 | <25 | <5.0 | <2.5 | <2.5 |

**Notes:**

(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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 TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels

- = No screening level available
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
--- = Analyte inadvertently not included in sample analysis.
--- = Analysis not required and/or well contains separate phase
= Analytical result exceeds the respective screening level.

**TABLE 6**
**RCRA Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-50 | | | | MW-51 | | | | MW-52 | | | | MW-53 | | | | MW-55 | | | | MW-58 | | | | MW-59 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 |
| **Volatile Organic Compounds (ug/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 5.24E+00 | (5) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,1,1-Trichloroethane | 6.00E+01 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,1,2,2-Tetrachloroethane | 1.00E+01 | (3) | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | — | — | < 40 | < 40 | — | — | — | < 40 | < 2.0 | < 2.0 | < 2.0 | < 10 |
| 1,1,2-Trichloroethane | 5.00E+00 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,1-Dichloroethane | 2.50E+01 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,1-Dichloroethene | 5.00E+00 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,1-Dichloropropene | - | - | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,2,3-Trichlorobenzene | - | - | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,2,3-Trichloropropane | 9.60E-02 | (5) | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | — | — | < 40 | < 40 | — | — | — | < 40 | < 2.0 | < 2.0 | < 2.0 | < 10 |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,2,4-Trimethylbenzene | 1.50E+01 | (1) | < 1.0 | < 1.0 | < 1.0 | 1.1 | < 1.0 | < 1.0 | < 1.0 | 36 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | — | — | 420 | 1100 | — | — | — | <20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,2-Dibromo-3-chloropropane | 2.00E-01 | (2) | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | — | — | < 40 | < 40 | — | — | — | < 40 | < 2.0 | < 2.0 | < 2.0 | < 10 |
| 1,2-Dibromoethane (EDB) | 5.00E-02 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,2-Dichlorobenzene | 6.00E+02 | (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 | — | — | < 20 | < 20 | | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,2-Dichloroethane (EDC) | 5.00E+00 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | 15 | 4.2 | 13 | < 5.0 |
| 1,2-Dichloropropane | 5.00E+00 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,3,5-Trimethylbenzene | 1.20E+01 | (1) | < 1.0 | < 1.0 | < 1.0 | 2.9 | < 1.0 | < 1.0 | < 1.0 | 14 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | — | — | 110 | 350 | — | — | — | <20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,3-Dichlorobenzene | - | - | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,3-Dichloropropane | 7.30E+02 | (1) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1,4-Dichlorobenzene | 7.50E+01 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | — | — | 120 | 140 | — | — | — | <20 | 5.7 | < 4.0 | 37 | 26 |
| 2,2-Dichloropropane | - | - | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | — | — | < 40 | < 40 | — | — | — | < 40 | < 2.0 | < 2.0 | < 2.0 | < 10 |
| 2-Butanone | 7.06E+03 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 200 | < 200 | — | — | — | < 200 | < 10 | < 10 | < 10 | < 50 |
| 2-Chlorotoluene | 7.30E+02 | (1) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 2-Hexanone | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 200 | < 200 | — | — | — | < 200 | < 10 | < 10 | < 10 | < 50 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | — | — | 190 | 240 | — | — | — | 240 | < 4.0 | < 4.0 | < 4.0 | <20 |
| 4-Chlorotoluene | 2.60E+03 | (1) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 4-Isopropyltoluene | - | - | < 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 | — | — | 20 | 30 | — | — | — | <20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| 4-Methyl-2-pentanone | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 200 | < 200 | — | — | — | < 200 | < 10 | < 10 | < 10 | < 50 |
| Acetone | 2.18E+04 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 200 | < 200 | — | — | — | < 200 | < 10 | < 10 | < 10 | < 50 |
| Benzene | 5.00E+00 | (2) | < 1.0 | < 1.0 | < 1.0 | 90 | < 1.0 | < 1.0 | 2.0 | 390 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | — | — | 7800 | 11000 | — | — | — | 4500 | 13 | 4.2 | 38 | 42 |
| Bromobenzene | 2.00E+01 | (1) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Bromodichloromethane | 1.17E+00 | (5) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Bromoform | 8.50E+00 | (1) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Bromomethane | 8.66E+00 | (5) | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | — | — | < 60 | < 60 | — | — | — | < 60 | < 3.0 | < 3.0 | < 3.0 | < 15 |
| Carbon disulfide | 1.04E+03 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 200 | < 200 | — | — | — | < 200 | < 10 | < 10 | < 10 | < 50 |
| Carbon Tetrachloride | 5.00E+00 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Chlorobenzene | 1.00E+02 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Chloroethane | - | - | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | — | — | < 40 | < 40 | — | — | — | < 40 | < 2.0 | < 2.0 | < 2.0 | < 10 |
| Chloroform | 1.00E+02 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Chloromethane | 1.78E+01 | (5) | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | — | — | < 60 | < 60 | — | — | — | < 60 | < 3.0 | < 3.0 | < 3.0 | < 15 |
| cis-1,2-DCE | 7.00E+01 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| cis-1,3-Dichloropropene | - | - | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Dibromochloromethane | 1.47E+00 | (5) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Dibromomethane | 3.70E+02 | (1) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Dichlorodifluoromethane | 3.95E+02 | (5) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Ethylbenzene | 7.00E+02 | (2) | < 1.0 | < 1.0 | < 1.0 | 4.1 | < 1.0 | < 1.0 | < 1.0 | 22 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | — | — | 2000 | 2600 | — | — | — | 140 | 89 | 29 | 260 | 100 |
| Hexachlorobutadiene | 8.60E-01 | (1) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Isopropylbenzene | 6.79E+02 | (5) | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 3.4 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | — | — | 160 | 180 | — | — | — | 110 | 13 | 4 | 32 | 15 |
| Methyl tert-butyl ether (MTBE) | 1.25E+02 | (5) | < 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 | — | — | 7800 | 7000 | — | — | — | 15000 | 530 | 140 | 330 | < 5.0 |
| Methylene Chloride | 5.00E+00 | (2) | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 2.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | — | — | < 60 | < 60 | — | — | — | < 60 | < 3.0 | < 3.0 | < 3.0 | < 15 |
| Naphthalene | 1.43E+00 | (5) | < 2.0 | < 3.0 | < 2.0 | 4.6 | < 2.0 | < 3.0 | < 2.0 | 9 | < 3.0 | < 3.0 | < 2.0 | < 2.0 | < 2.0 | < 3.0 | < 2.0 | < 2.0 | — | — | 520 | 660 | — | — | — | 120 | 15 | 8.8 | 69 | 51 |
| n-Butylbenzene | - | - | < 3.0 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | < 1.0 | < 1.0 | — | — | 30 | 62 | — | — | — | <20 | 3.1 | < 3.0 | 11 | 8.3 |
| n-Propylbenzene | - | - | < 1.0 | < 2.0 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | 2.4 | < 1.0 | < 2.0 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 1.0 | — | — | 390 | 490 | — | — | — | 110 | 9.8 | 3.8 | 32 | 12 |
| sec-Butylbenzene | - | - | < 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 | — | — | 27 | 29 | — | — | — | <20 | 5.2 | 1.5 | 9.4 | 6.4 |
| Styrene | 1.00E+02 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| tert-Butylbenzene | - | - | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Tetrachloroethene (PCE) | 5.00E+00 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Toluene | 7.50E+02 | (3) | < 1.0 | < 1.0 | < 1.0 | 2.4 | < 1.0 | < 1.0 | < 1.0 | 8.9 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | — | — | < 20 | 29 | — | — | — | <20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| trans-1,2-DCE | 1.00E+02 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| trans-1,3-Dichloropropene | 4.30E-01 | (1) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Trichloroethene (TCE) | 5.00E+00 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Trichlorofluoromethane | 1.29E+03 | (5) | < 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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Vinyl chloride | 1.00E+00 | (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 | — | — | < 20 | < 20 | — | — | — | < 20 | < 1.0 | < 1.0 | < 1.0 | < 5.0 |
| Xylenes, Total | 6.20E+02 | (3) | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | 34 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | — | — | 620 | 1700 | — | — | — | <30 | < 1.5 | < 1.5 | < 1.5 | < 7.5 |

**TABLE 6**
**RCRA Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-50 | | | | MW-51 | | | | MW-52 | | | | MW-53 | | | | MW-55 | | | | MW-58 | | | | MW-59 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1,3-Dichlorobenzene | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | 73 | <10 | — | — | — | <10 | < 10 | < 10 | 13 | < 10 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | — | — | < 20 | < 20 | — | — | — | < 20 | < 20 | < 20 | < 20 | < 20 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | — | — | < 20 | < 20 | — | — | — | < 20 | < 20 | < 20 | < 20 | < 20 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Chlorophenol | 1.83E+02 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | 110 | 150 | — | — | — | 90 | < 10 | < 10 | < 10 | < 10 |
| 2-Methylphenol | 1.80E+03 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Nitroaniline | 1.10E+02 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Nitrophenol | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 3,3´-Dichlorobenzidine | 1.50E-01 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 3+4-Methylphenol | 1.80E+02 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 3-Nitroaniline | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 4,6-Dinitro-2-methylphenol | - | - | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | — | — | < 20 | < 20 | — | — | — | < 20 | < 20 | < 20 | < 20 | < 20 |
| 4-Bromophenyl phenyl ether | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 4-Chloro-3-methylphenol | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 4-Chloroaniline | 3.40E-01 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 4-Chlorophenyl phenyl ether | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| 4-Nitroaniline | 3.40E+00 | (1) | < 10 | < 20 | < 20 | < 20 | < 10 | < 20 | < 20 | < 20 | < 10 | < 20 | < 20 | < 20 | < 10 | < 20 | < 20 | < 20 | — | — | < 20 | < 20 | — | — | — | < 20 | < 10 | < 20 | < 20 | < 20 |
| 4-Nitrophenol | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Acenaphthene | 2.19E+03 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Acenaphthylene | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Aniline | 1.20E+01 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Anthracene | 1.10E+04 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Azobenzene | 1.20E-01 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benz(a)anthracene | 9.21E-01 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzo(a)pyrene | 2.00E-01 | (2) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzo(g,h,i)perylene | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzoic acid | 1.50E+05 | (1) | < 40 | < 20 | < 20 | < 20 | < 40 | < 20 | < 20 | < 20 | < 40 | < 20 | < 20 | < 20 | < 40 | < 20 | < 20 | < 20 | — | — | < 20 | < 20 | — | — | — | < 20 | < 40 | < 20 | < 20 | < 20 |
| Benzyl alcohol | 1.80E+04 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Carbazole | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Chrysene | 9.21E+01 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Dibenzofuran | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Diethyl phthalate | 2.92E+04 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Dimethyl phthalate | 3.65E+05 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Di-n-octyl phthalate | - | - | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Fluoranthene | 1.46E+03 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Fluorene | 1.46E+03 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Hexachlorobenzene | 1.00E+00 | (2) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Hexachlorobutadiene | 8.60E-01 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Hexachloroethane | 3.65E+01 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Isophorone | 7.07E+02 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Naphthalene | 1.43E+00 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | 200 | 290 | — | — | — | 76 | < 10 | 17 | 22 | 12 |
| Nitrobenzene | 1.49E+01 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Pentachlorophenol | 1.00E+00 | (2) | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | — | — | < 20 | < 20 | — | — | — | < 20 | < 20 | < 20 | < 20 | < 20 |
| Phenanthrene | 1.10E+03 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Phenol | 5.00E+00 | (3) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | 16 | — | — | — | 11 | < 10 | < 10 | < 10 | < 10 |
| Pyrene | 1.10E+03 | (5) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |
| Pyridine | 3.70E+01 | (1) | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | — | — | < 10 | < 10 | — | — | — | < 10 | < 10 | < 10 | < 10 | < 10 |

**TABLE 6**
**RCRA Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-50 | | | | MW-51 | | | | MW-52 | | | | MW-53 | | | | MW-55 | | | | MW-58 | | | | MW-59 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | 0.35 | 0.37 | 0.39 | 0.4 | 0.55 | 0.51 | 0.59 | 0.52 | 0.43 | 0.85 | 0.69 | 0.76 | < 0.10 | 0.4 | 0.22 | 0.29 | — | — | <0.10 | 0.35 | — | — | — | 0.31 | < 0.50 | < 0.5 | 0.33 | 0.34 |
| Chloride | 250 | (3) | 3.7 | 6.6 | 8 | 12 | 9.6 | 7.6 | 12 | 14 | 670 | 720 | 690 | 600 | 620 | 960 | 920 | 840 | — | — | 420 | 470 | — | — | — | 270 | 180 | 150 | 140 | 120 |
| Nitrite | 1 | (2) | < 0.10 | < 0.10 | <0.10 | 0.10 | < 0.10 | <0.10 | <0.10 | <0.10 | < 2.0 | < 2.0 | <2.0 | <2.0 | < 2.0 | < 2.0 | <2.0 | <2.0 | — | — | <0.10 | *6.1 | — | — | — | *5.5 | < 0.50 | < 0.5 | <0.10 | *1.3 |
| Bromide | - | - | < 0.10 | < 0.10 | <0.10 | <0.10 | < 0.10 | < 0.1 | <0.10 | <0.10 | 1.8 | 1.5 | 1.70 | 1.70 | 2.1 | 1.7 | 1.80 | 1.80 | — | — | 4.20 | 4.40 | — | — | — | 5.00 | 2.7 | 2.5 | 0.31 | 1.40 |
| Nitrate | 10 | (3) | 0.16 | < 0.10 | 0.21 | 0.14 | 0.82 | 0.25 | 0.70 | 0.14 | 20 | 19 | 15 | 3 | 14 | 12 | 11 | 8.10 | — | — | <0.10 | *6.1 | — | — | — | *5.5 | < 0.50 | < 0.5 | 0.26 | *1.3 |
| Phosphorus | - | - | < 0.50 | < 0.50 | <0.50 | <0.50 | < 0.50 | < 0.5 | <0.50 | <0.50 | < 10 | < 10 | <0.50 | <0.50 | < 10 | < 0.5 | <0.50 | <0.50 | — | — | <0.50 | <0.50 | — | — | — | <0.50 | < 2.5 | < 2.5 | <0.50 | <0.50 |
| Sulfate | 600 | (3) | 41 | 26 | 38.0 | 66 | 47 | 35 | 67 | 61 | 1200 | 1300 | 1200 | 1700 | 1200 | 1000 | 1000 | 990 | — | — | <0.50 | 1 | — | — | — | 2 | 510 | 310 | 320 | 210 |
| Carbon Dioxide ($CO_2$) | - | - | 250 | 220 | 200 | 210 | 220 | 210 | 210 | 250 | 190 | 240 | 250 | 190 | 310 | 320 | 330 | 350 | — | — | 1000 | 1000 | — | — | — | 1100 | 920 | 960 | 940 | 860 |
| Alkalinity ($CaCO_3$) | - | - | 280 | 240 | 230 | 210 | 250 | 230 | 240 | 250 | 200 | 220 | 270 | 190 | 350 | 340 | 370 | 350 | — | — | 1100 | 1000 | — | — | — | 1100 | 970 | 990 | 940 | 860 |
| Bicarbonate ($CaCO_3$) | - | - | 280 | 240 | 230 | 210 | 250 | 230 | 240 | 250 | 200 | 220 | 270 | 190 | 350 | 340 | 370 | 350 | — | — | 1100 | 1000 | — | — | — | 1100 | 970 | 990 | 940 | 860 |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | < 0.020 | <0.02 | <0.02 | <0.02 | < 0.020 | <0.02 | <0.02 | <0.02 | < 0.10 | < 0.02 | <0.02 | <0.02 | < 0.020 | < 0.020 | <0.02 | <0.02 | — | — | <0.02 | 0.06 | — | — | — | <0.02 | < 0.020 | <0.02 | <0.02 | <0.02 |
| Barium | 1 | (3) | 0.088 | 0.096 | 0.11 | 0.13 | 0.099 | 0.076 | 0.13 | 0.12 | 0.27 | 0.22 | 0.087 | 0.11 | 0.039 | 0.038 | 0.15 | 0.078 | — | — | 2.6 | 5.9 | — | — | — | 1.6 | 0.10 | 0.640 | 0.087 | 0.095 |
| Cadmium | 0.005 | (2) | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | — | — | <0.002 | <0.002 | — | — | — | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | < 0.0060 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | — | — | <0.006 | 0.054 | — | — | — | <0.006 | < 0.0060 | 0.017 | <0.006 | <0.006 |
| Lead | 0.015 | (2) | < 0.0050 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.005 | 0.0086 | <0.005 | < 0.025 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | — | — | 0.023 | 0.3 | — | — | — | 0.034 | 0.0052 | 0.035 | <0.005 | <0.005 |
| Selenium | 0.05 | (2) | < 0.050 | <0.05 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 | — | — | <0.05 | <0.05 | — | — | — | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 |
| Silver | 0.05 | (3) | < 0.025 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.05 | <0.005 | <0.05 | < 0.025 | <0.005 | <0.005 | <0.005 | < 0.025 | <0.005 | <0.005 | <0.005 | — | — | <0.005 | <0.005 | — | — | — | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | — | — | <0.0002 | <0.001 | — | — | — | <0.001 | < 0.00020 | <0.0002 | <0.0002 | <0.001 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | 0.0036 | 0.004 | 0.0033 | <0.02 | 0.0032 | 0.0032 | 0.003 | <0.02 | 0.0052 | 0.0031 | 0.0031 | <0.02 | 0.0042 | 0.0027 | 0.0034 | <0.02 | — | — | 0.0068 | <0.02 | — | — | — | <0.02 | 0.017 | 0.014 | 0.019 | <0.02 |
| Barium | 1 | (3) | 0.083 | 0.071 | 0.055 | 0.059 | 0.058 | 0.053 | 0.06 | 0.076 | 0.018 | 0.020 | 0.021 | 0.038 | 0.02 | 0.018 | 0.024 | 0.025 | — | — | 2.6 | 2.5 | — | — | — | 1.6 | 0.072 | 0.085 | 0.076 | 0.073 |
| Cadmium | 0.01 | (3) | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | < 0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | — | — | <0.002 | <0.002 | — | — | — | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 |
| Calcium | - | - | 65 | 54 | 51 | 68 | 65 | 58 | 68 | 71 | 300 | 320 | 300 | 250 | 330 | 340 | 310 | 290 | — | — | 170 | 180 | — | — | — | 150 | 210 | 200 | 190 | 150 |
| Chromium | 0.05 | (3) | < 0.0060 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | — | — | <0.006 | <0.006 | — | — | — | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 |
| Copper | 1 | (3) | 0.0013 | <0.006 | <0.006 | <0.006 | 0.0015 | <0.006 | <0.006 | <0.006 | 0.017 | <0.006 | <0.006 | <0.006 | 0.022 | <0.006 | <0.006 | <0.006 | — | — | <0.006 | <0.006 | — | — | — | <0.006 | < 0.020 | <0.006 | <0.006 | <0.006 |
| Iron | 1 | (3) | < 0.020 | <0.02 | <0.02 | 0.035 | < 0.020 | <0.02 | <0.02 | 0.2 | 0.39 | 2.3 | 0.12 | 0.7 | < 0.020 | < 0.02 | 0.036 | 0.13 | — | — | 9.8 | 12 | — | — | — | 8.9 | 7.3 | 6.1 | 4.9 | 2.7 |
| Lead | 0.05 | (3) | < 0.0010 | <0.005 | <0.005 | <0.005 | < 0.0010 | < 0.001 | <0.005 | <0.005 | < 0.0010 | < 0.001 | <0.005 | <0.005 | < 0.0010 | < 0.001 | <0.005 | <0.005 | — | — | 0.0061 | <0.005 | — | — | — | 0.0085 | < 0.0010 | < 0.001 | <0.005 | <0.005 |
| Magnesium | - | - | 14 | 13 | 12 | 14 | 13 | 12 | 14 | 15 | 76 | 82 | 76 | 70 | 55 | 54 | 51 | 48 | — | — | 55 | 64 | — | — | — | 49 | 56 | 51 | 43 | 32 |
| Manganese | 0.2 | (3) | 2.3 | 2.2 | 2.3 | 3.7 | 1.0 | 0.99 | 1.3 | 2 | 2.3 | 2.9 | 3.1 | 3.6 | 0.18 | 0.520 | 0.5 | 0.96 | — | — | 5.6 | 6.8 | — | — | — | 4.3 | 3.2 | 3.3 | 3.4 | 2.9 |
| Mercury | - | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | — | — | --- | --- | — | — | — | --- | --- | --- | --- | --- |
| Potassium | - | - | 2.1 | 1.6 | 1.8 | 1.9 | 2.1 | 1.8 | 2 | 2 | 5.7 | 5.1 | 4.4 | 4.4 | 5.9 | 4.7 | 4.8 | 5.3 | — | — | 10 | 11 | — | — | — | 4.9 | 3.0 | 3.0 | 2.7 | 3.2 |
| Selenium | 0.05 | (3) | < 0.0010 | 0.001 | 0.001 | <0.05 | < 0.0010 | < 0.001 | 0.001 | <0.05 | 0.052 | 0.053 | 0.036 | <0.05 | 0.021 | 0.010 | 0.02 | <0.05 | — | — | 0.016 | <0.05 | — | — | — | <0.05 | 0.011 | 0.0061 | 0.0084 | <0.25 |
| Silver | 0.05 | (3) | < 0.025 | <0.005 | <0.005 | <0.005 | < 0.025 | < 0.005 | <0.005 | <0.005 | < 0.025 | <0.005 | <0.005 | <0.005 | < 0.025 | <0.005 | <0.005 | <0.005 | — | — | <0.005 | 0.005 | — | — | — | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 |
| Sodium | - | - | 37 | 39 | 40 | 42 | 43 | 43 | 51 | 48 | 590 | 630 | 600 | 560 | 740 | 780 | 750 | 700 | — | — | 500 | 400 | — | — | — | 390 | 380 | 390 | 370 | 340 |
| Uranium | 0.03 | (3) | < 0.0010 | <0.001 | <0.001 | <0.001 | 0.0015 | 0.0013 | 0.0023 | 0.0018 | 0.0099 | 0.0093 | 0.0094 | 0.0072 | 0.018 | 0.016 | 0.015 | 0.0108 | — | — | <0.001 | <0.001 | — | — | — | <0.001 | 0.0036 | 0.0024 | 0.0023 | 0.0023 |
| Zinc | 10 | (3) | < 0.010 | 0.07 | 0.25 | <0.05 | 0.011 | 0.043 | 0.16 | <0.05 | 0.014 | 0.11 | 0.099 | <0.05 | < 0.010 | 0.073 | 0.17 | <0.05 | — | — | 0.18 | <0.05 | — | — | — | <0.05 | 0.037 | 0.10 | 0.046 | <0.05 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | < 0.20 | <0.2 | <0.20 | <0.20 | < 0.20 | <0.2 | <0.20 | <0.2 | < 0.20 | < 0.2 | <0.20 | <0.20 | < 0.20 | <0.20 | <0.20 | <0.20 | — | — | 5.5 | 13 | — | — | — | 6.6 | 0.68 | 0.55 | 0.84 | 0.61 |
| Gasoline Range Organics | - | - | < 0.050 | < 0.05 | <0.05 | 0.48 | < 0.050 | < 0.05 | <0.05 | 1.8 | < 0.050 | <0.05 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 | — | — | 40.0 | 59 | — | — | — | 29 | 0.96 | 1.2 | 1.6 | 1.3 |
| 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 | — | — | <2.5 | <2.5 | — | — | — | <2.5 | < 2.5 | < 2.5 | <2.5 | <2.5 |

**Notes:**

(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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
(4) NMED TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels

- = No screening level available
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
--- = Analyte inadvertently not included in sample analysis.
— = Analysis not required and/or well contains separate phase
= Analytical result exceeds the respective screening level.

**TABLE 6**
**RCRA Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-60 | | | | MW-62 | | | | MW-63 | | | | MW-64 | | | | MW-65 | | | | MW-67 | | | MW-68 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-13 | Aug-12 | Aug-11 |
| **Volatile Organic Compounds (ug/L)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 5.24E+00 | (5) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane | 6.00E+01 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | 1.00E+01 | (3) | — | — | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 40 | < 40 | < 40 | < 40 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 1,1,2-Trichloroethane | 5.00E+00 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | 2.50E+01 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | 5.00E+00 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene | - | - | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichlorobenzene | - | - | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichloropropane | 9.60E-02 | (5) | — | — | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 40 | < 40 | < 40 | < 40 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,4-Trimethylbenzene | 1.50E+01 | (1) | — | — | < 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 | **1800** | **1500** | **1900** | **2000** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dibromo-3-chloropropane | 2.00E-01 | (2) | — | — | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 40 | < 40 | < 40 | < 40 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 1,2-Dibromoethane (EDB) | 5.00E-02 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichlorobenzene | 6.00E+02 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane (EDC) | 5.00E+00 | (2) | — | — | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | **1.3** | **1.2** | **3.5** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | **160** | **170** | **260** | **120** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | 5.00E+00 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3,5-Trimethylbenzene | 1.20E+01 | (1) | — | — | < 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 | **36** | **90** | **280** | **260** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichlorobenzene | - | - | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane | 7.30E+02 | (1) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,4-Dichlorobenzene | 7.50E+01 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | — | — | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | **120** | **130** | **160** | <200 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| 2,2-Dichloropropane | - | - | — | — | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 40 | < 40 | < 40 | < 40 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 2-Butanone | 7.06E+03 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 200 | < 200 | < 200 | < 200 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Chlorotoluene | 7.30E+02 | (1) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Hexanone | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 200 | < 200 | < 200 | < 200 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | — | — | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | **190** | **210** | **300** | <200 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| 4-Chlorotoluene | 2.60E+03 | (1) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 4-Isopropyltoluene | - | - | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 4-Methyl-2-pentanone | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 200 | < 200 | < 200 | < 200 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Acetone | 2.18E+04 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 200 | < 200 | **1400** | **2800** | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzene | 5.00E+00 | (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 | **6800** | **7200** | **6300** | **3600** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromobenzene | 2.00E+01 | (1) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromodichloromethane | 1.17E+00 | (5) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromoform | 8.50E+00 | (1) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | 8.66E+00 | (5) | — | — | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 60 | < 60 | < 60 | < 60 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Carbon disulfide | 1.04E+03 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 200 | < 200 | < 200 | < 200 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Carbon Tetrachloride | 5.00E+00 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | 1.00E+02 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroethane | - | - | — | — | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 40 | < 40 | < 40 | < 40 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Chloroform | 1.00E+02 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | 1.78E+01 | (5) | — | — | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 60 | < 60 | < 60 | < 60 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| cis-1,2-DCE | 7.00E+01 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis-1,3-Dichloropropene | - | - | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromochloromethane | 1.47E+00 | (5) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromomethane | 3.70E+02 | (1) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dichlorodifluoromethane | 3.95E+02 | (5) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene | 7.00E+02 | (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 | **1700** | **1700** | **2100** | **2100** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Hexachlorobutadiene | 8.60E-01 | (1) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Isopropylbenzene | 6.79E+02 | (5) | — | — | < 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 | **75** | **79** | **85** | **82** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methyl tert-butyl ether (MTBE) | 1.25E+02 | (5) | — | — | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | **4.9** | **11** | **110** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | **950** | **790** | **1600** | **960** | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Methylene Chloride | 5.00E+00 | (2) | — | — | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 60 | < 60 | < 60 | < 60 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 | < 3.0 |
| Naphthalene | 1.43E+00 | (5) | — | — | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | **430** | **400** | **620** | **550** | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| n-Butylbenzene | - | - | — | — | < 1.0 | < 1.0 | < 3.0 | < 3.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | < 1.0 | < 1.0 | < 60 | < 60 | < 20 | < 20 | < 3.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | < 1.0 |
| n-Propylbenzene | - | - | — | — | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 1.0 | **200** | **230** | **260** | **250** | < 1.0 | < 2.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 |
| sec-Butylbenzene | - | - | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Styrene | 1.00E+02 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| tert-Butylbenzene | - | - | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene (PCE) | 5.00E+00 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | 7.50E+02 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,2-DCE | 1.00E+02 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| trans-1,3-Dichloropropene | 4.30E-01 | (1) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene (TCE) | 5.00E+00 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorofluoromethane | 1.29E+03 | (5) | — | — | < 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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vinyl chloride | 1.00E+00 | (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 | < 20 | < 20 | < 20 | < 20 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Xylenes, Total | 6.20E+02 | (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 | **330** | **590** | **4400** | **9900** | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 | < 1.5 |

**TABLE 6**
**RCRA Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-60 | | | | MW-62 | | | | MW-63 | | | | MW-64 | | | | MW-65 | | | | MW-67 | | | MW-68 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-13 | Aug-12 | Aug-11 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1,3-Dichlorobenzene | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | **80** | **96** | **91** | <10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | — | — | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | **18** | **17** | **32** | **54** | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | — | — | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Chlorophenol | 1.83E+02 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | **130** | **150** | **140** | **97** | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Methylphenol | 1.80E+03 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Nitroaniline | 1.10E+02 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 2-Nitrophenol | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 3,3´-Dichlorobenzidine | 1.50E-01 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 3+4-Methylphenol | 1.80E+02 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 3-Nitroaniline | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 4,6-Dinitro-2-methylphenol | - | - | — | — | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 |
| 4-Bromophenyl phenyl ether | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 4-Chloro-3-methylphenol | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 4-Chloroaniline | 3.40E-01 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 4-Chlorophenyl phenyl ether | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 4-Nitroaniline | 3.40E+00 | (1) | — | — | < 20 | < 20 | < 10 | < 20 | < 20 | < 20 | < 10 | < 20 | < 20 | < 20 | < 10 | < 20 | < 20 | < 20 | < 10 | < 20 | < 20 | < 20 | < 10 | < 20 | < 20 | < 10 | < 20 | < 20 |
| 4-Nitrophenol | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Acenaphthene | 2.19E+03 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Acenaphthylene | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Aniline | 1.20E+01 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Anthracene | 1.10E+04 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Azobenzene | 1.20E-01 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benz(a)anthracene | 9.21E-01 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzo(a)pyrene | 2.00E-01 | (2) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzo(g,h,i)perylene | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Benzoic acid | 1.50E+05 | (1) | — | — | < 20 | < 20 | < 40 | < 20 | < 20 | < 20 | < 40 | < 20 | < 20 | < 20 | < 40 | < 20 | < 20 | < 20 | **110** | < 20 | < 20 | < 20 | < 40 | < 20 | < 20 | < 40 | < 20 | < 20 |
| Benzyl alcohol | 1.80E+04 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Carbazole | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Chrysene | 9.21E+01 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Dibenzofuran | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Diethyl phthalate | 2.92E+04 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Dimethyl phthalate | 3.65E+05 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Di-n-octyl phthalate | - | - | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Fluoranthene | 1.46E+03 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Fluorene | 1.46E+03 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Hexachlorobenzene | 1.00E+00 | (2) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Hexachlorobutadiene | 8.60E-01 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Hexachloroethane | 3.65E+01 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Isophorone | 7.07E+02 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Naphthalene | 1.43E+00 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | **310** | **260** | **330** | **260** | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Nitrobenzene | 1.49E+01 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 20 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Pentachlorophenol | 1.00E+00 | (2) | — | — | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 10 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 |
| Phenanthrene | 1.10E+03 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Phenol | 5.00E+00 | (3) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | **39** | **52** | **13** | <10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Pyrene | 1.10E+03 | (5) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Pyridine | 3.70E+01 | (1) | — | — | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | **260** | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |

**TABLE 6**
**RCRA Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | MW-60 | | | | MW-62 | | | | MW-63 | | | | MW-64 | | | | MW-65 | | | | MW-67 | | | MW-68 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-10 | Aug-13 | Aug-12 | Aug-11 | Aug-13 | Aug-12 | Aug-11 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | — | — | 0.26 | <0.10 | < 0.10 | < 0.5 | 0.14 | <0.10 | 0.14 | < 0.5 | 0.2 | 0.16 | 0.35 | < 0.50 | 0.27 | 0.18 | < 0.50 | < 0.5 | 0.26 | <0.50 | 0.92 | 0.77 | 0.82 | 0.47 | < 0.5 | 0.41 |
| Chloride | 250 | (3) | — | — | 210 | 110 | 14 | 12 | 15.00 | 16 | 370 | 250 | 180 | 290 | 920 | 940 | 830 | 840 | 180 | 160 | 180 | 220 | 15 | 6.5 | 22 | 43 | 62 | 72 |
| Nitrite | 1 | (2) | <0.10 | <2.0 | <0.10 | <0.10 | < 0.10 | *< 1 | <0.10 | <0.10 | < 2.0 | 110* | <2.0 | <2.0 | < 2.0 | *43 | <2.0 | *52 | < 0.50 | *< 1 | <1.0 | *<1.0 | < 0.10 | *5.5 | <0.10 | < 0.10 | *6 | <0.10 |
| Bromide | - | - | — | — | 4.40 | 2.30 | < 0.10 | < 0.5 | <0.10 | <0.10 | 6.6 | 5.2 | 2.90 | 4.60 | 2.4 | 5.7 | 3.80 | 2.90 | 3.6 | 4.3 | 4.00 | 3.70 | 0.11 | < 0.5 | 0.16 | 0.25 | < 0.5 | 0.25 |
| Nitrate | 10 | (3) | — | — | 26 | 31 | < 0.10 | *< 1 | *<1.0 | 0.29 | 150 | *110 | 67 | 110 | 32 | *43 | 60 | *52 | < 0.50 | *< 1 | <1.0 | *<1.0 | 3.7 | *5.5 | 4.30 | 8.2 | *6 | 6.70 |
| Phosphorus | - | - | — | — | <0.50 | <0.50 | < 10 | < 2.5 | <0.50 | <0.50 | < 10 | < 2.5 | <0.50 | <0.50 | < 10 | < 2.5 | <0.50 | <0.50 | < 2.5 | < 2.5 | <0.50 | <2.5 | < 0.50 | < 2.5 | <0.50 | < 0.50 | < 2.5 | <0.50 |
| Sulfate | 600 | (3) | — | — | 1000 | 730 | 3600 | 3600 | 3700 | 5100 | 2100 | 1800 | 1400 | 2200 | 1400 | 1600 | 1600 | 1600 | 1500 | 1600 | 460 | 620 | 140 | 200.0 | 190 | 250 | 280 | 470 |
| Carbon Dioxide ($CO_2$) | - | - | — | — | 730 | 590 | 580 | 580 | 530 | 550 | 420 | 530 | 540 | 580 | 280 | 300 | 310 | 340 | 1200 | 1100 | 1100 | 1100 | 340 | 460 | 360 | 190 | 190 | 190 |
| Alkalinity ($CaCO_3$) | - | - | — | — | 780 | 590 | 620 | 610 | 550 | 550 | 430 | 520 | 560 | 580 | 290 | 300 | 330 | 340 | 1300 | 1200 | 1200 | 1100 | 370 | 470 | 390 | 210 | 200 | 210 |
| Bicarbonate ($CaCO_3$) | - | - | — | — | 780 | 590 | 620 | 610 | 550 | 550 | 430 | 520 | 560 | 580 | 290 | 300 | 330 | 340 | 1300 | 1200 | 1200 | 1100 | 370 | 470 | 390 | 210 | 200 | 210 |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | — | — | <0.02 | <0.02 | < 0.020 | <0.02 | <0.02 | 0.024 | < 0.020 | <0.02 | <0.02 | <0.02 | < 0.020 | <0.020 | <0.02 | <0.02 | < 0.020 | <0.02 | <0.02 | 0.03 | < 0.020 | <0.02 | <0.02 | < 0.020 | <0.02 | <0.02 |
| Barium | 1 | (3) | — | — | 0.07 | 0.089 | 0.31 | 0.021 | 0.048 | 0.032 | 0.04 | 0.110 | 0.05 | 0.029 | 0.21 | 0.056 | 0.26 | 0.6 | 0.07 | 0.058 | 0.062 | 0.076 | 0.049 | 0.052 | 0.051 | 0.039 | 0.065 | 0.065 |
| Cadmium | 0.005 | (2) | — | — | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.0020 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | — | — | <0.006 | 0.0063 | 0.015 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | 0.0063 | <0.0060 | 0.0094 | 0.029 | < 0.0060 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 |
| Lead | 0.015 | (2) | — | — | 0.0063 | 0.0051 | 0.0097 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.0050 | <0.005 | 0.005 | 0.0064 | <0.005 | <0.005 | <0.005 | < 0.025 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 |
| Selenium | 0.05 | (2) | — | — | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 | < 0.050 | <0.050 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 | < 0.050 | <0.05 | <0.05 |
| Silver | 0.05 | (3) | — | — | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.0050 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | < 0.025 | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | — | — | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | <0.00020 | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 | < 0.00020 | <0.0002 | <0.0002 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | — | — | 0.0046 | <0.02 | < 0.010 | < 0.001 | 0.001 | <0.02 | < 0.020 | 0.0068 | 0.0034 | <0.02 | 0.0045 | 0.0029 | 0.0046 | <0.02 | 0.023 | 0.020 | 0.024 | <0.02 | < 0.0010 | <0.001 | <0.0010 | < 0.0010 | <0.001 | <0.0010 |
| Barium | 1 | (3) | — | — | 0.048 | 0.038 | 0.013 | 0.015 | 0.017 | <0.02 | 0.015 | 0.017 | 0.013 | <0.02 | 0.011 | 0.012 | 0.012 | <0.02 | 0.057 | 0.053 | 0.069 | 0.069 | 0.035 | 0.040 | 0.034 | 0.019 | 0.022 | 0.026 |
| Cadmium | 0.01 | (3) | — | — | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | < 0.0020 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 | < 0.0020 | <0.002 | <0.002 |
| Calcium | - | - | — | — | 230 | 220 | 440 | 450 | 430 | 430 | 550 | 460 | 350 | 430 | 490 | 490 | 450 | 430 | 350 | 410 | 170 | 180 | 120 | 160 | 120 | 90 | 88 | 100 |
| Chromium | 0.05 | (3) | — | — | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | < 0.0060 | < 0.0060 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 | < 0.0060 | <0.006 | <0.006 |
| Copper | 1 | (3) | — | — | <0.006 | <0.006 | < 0.010 | <0.006 | <0.006 | <0.006 | < 0.020 | <0.006 | <0.006 | <0.006 | < 0.050 | < 0.0060 | <0.006 | <0.006 | < 0.020 | <0.006 | <0.006 | <0.006 | 0.0029 | <0.006 | <0.006 | 0.004 | <0.006 | <0.006 |
| Iron | 1 | (3) | — | — | <0.02 | <0.02 | 0.026 | 0.089 | 0.97 | 0.87 | < 0.020 | <0.02 | <0.02 | <0.02 | 0.038 | 0.029 | <0.02 | 0.03 | 8.9 | 12 | 4.1 | 6.2 | < 0.020 | <0.02 | <0.02 | < 0.020 | <0.02 | <0.02 |
| Lead | 0.05 | (3) | — | — | <0.005 | <0.005 | < 0.0010 | < 0.001 | < 0.002 | <0.005 | < 0.0010 | < 0.001 | <0.005 | <0.005 | < 0.0010 | <0.0010 | <0.005 | <0.005 | < 0.0010 | < 0.001 | <0.005 | <0.005 | < 0.0010 | <0.001 | <0.005 | < 0.0010 | <0.001 | <0.005 |
| Magnesium | - | - | — | — | 75 | 69 | 38 | 39 | 39 | 37 | 180 | 180 | 91 | 150 | 69 | 75 | 72 | 67 | 99 | 110 | 52 | 56 | 23 | 33 | 27 | 22 | 22 | 25 |
| Manganese | 0.2 | (3) | — | — | 0.048 | 0.33 | 1.7 | 1.8 | 1.8 | 1.2 | 1.5 | 2.20 | 1.7 | 3.7 | < 0.0020 | < 0.0020 | <0.002 | 0.013 | 3.7 | 5.3 | 3.2 | 3.5 | 0.068 | 0.170 | 0.45 | 0.045 | 0.120 | 0.21 |
| Mercury | - | - | — | — | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Potassium | - | - | — | — | 3.5 | 2.9 | 9.1 | 10 | 11 | 10 | 4.9 | 4.7 | 4.4 | 5 | 4.5 | 4.9 | 5 | 4.9 | 3.8 | 4.3 | 3.6 | 3.8 | 3.4 | 3.3 | 3.4 | 3.5 | 3.0 | 3.1 |
| Selenium | 0.05 | (3) | — | — | 0.023 | <0.05 | < 0.010 | <0.005 | <0.006 | <0.05 | 0.057 | <0.05 | 0.031 | <0.05 | 0.029 | < 0.050 | 0.041 | <0.05 | 0.021 | < 0.01 | 0.016 | <0.05 | 0.0037 | 0.0018 | 0.0035 | 0.0038 | 0.0035 | 0.0048 |
| Silver | 0.05 | (3) | — | — | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | < 0.0050 | < 0.0050 | <0.005 | <0.005 | < 0.0050 | <0.005 | <0.005 | <0.005 | < 0.025 | <0.005 | <0.005 | < 0.025 | <0.005 | <0.005 |
| Sodium | - | - | — | — | 560 | 320 | 1400 | 1500 | 1400 | 1400 | 650 | 580 | 570 | 660 | 790 | 890 | 750 | 780 | 700 | 860 | 530 | 490 | 67 | 90 | 100 | 110 | 110 | 130 |
| Uranium | 0.03 | (3) | — | — | 0.012 | 0.0086 | 0.008 | 0.0075 | 0.0077 | 0.0066 | 0.055 | 0.067 | 0.041 | 0.056 | 0.017 | 0.016 | 0.017 | 0.0143 | 0.0073 | 0.010 | 0.0077 | 0.0067 | 0.0064 | 0.0077 | 0.0083 | 0.0057 | 0.0039 | 0.0052 |
| Zinc | 10 | (3) | — | — | 0.085 | <0.05 | < 0.010 | 0.066 | 0.075 | <0.05 | < 0.010 | 0.17 | 0.15 | <0.05 | < 0.010 | 0.096 | 0.062 | <0.05 | < 0.010 | 0.052 | 0.026 | <0.05 | < 0.010 | 0.062 | 0.074 | < 0.010 | 0.011 | 0.27 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | — | — | <0.20 | <0.20 | < 0.20 | <0.20 | <0.20 | <0.20 | 0.71 | <0.20 | <0.20 | <0.20 | < 0.20 | <0.20 | <0.20 | <0.20 | 5.2 | 2.3 | 9.8 | 9.8 | < 0.20 | < 0.2 | 0.26 | < 0.20 | <0.20 | <0.20 |
| Gasoline Range Organics | - | - | — | — | <0.05 | 0.43 | < 0.050 | <0.05 | <0.050 | <0.05 | < 0.050 | <0.05 | <0.05 | 0.13 | < 0.050 | <0.05 | <0.05 | <0.05 | 26 | 22 | 40.0 | 40 | < 0.050 | 0.053 | <0.05 | < 0.050 | <0.05 | <0.05 |
| 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 | <2.5 | <2.5 | < 2.5 | <2.5 | <2.5 | < 2.5 | <2.5 | <2.5 |

**Notes:**
(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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 TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels
– No screening level or analytical result available
* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime
--- = Analyte inadvertantly not included in analysis.
= Analytical result exceeds the respective screening level.

**TABLE 7**
**Collection and Observation Wells Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | CW 0+60 | | | | | | | | CW 25+95 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | | | | | | | | | |
| Benzene | 0.005 | (2) | 0.071 | 0.014 | 0.0079 | 0.014 | <0.001 | 0.019 | 0.25 | 0.036 | 0.210 | 0.81 | 2.000 | 2.2 | 3.6 | 6.7 | 14 | 22 |
| Toluene | 0.750 | (3) | <0.001 | <0.010 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.010 | <0.010 | 0.013 | 0.022 | 0.16 | 0.16 | 5.7 | 9 |
| Ethylbenzene | 0.700 | (2) | 0.0029 | <0.010 | 0.0043 | 0.0028 | 0.003 | 0.0016 | 0.0039 | 0.0069 | <0.010 | 0.045 | 0.120 | 0.41 | 0.58 | 0.8 | 1.8 | 2 |
| Xylene | 0.620 | (3) | <0.002 | <0.020 | <0.002 | <0.002 | <0.002 | <0.003 | <0.003 | 0.003 | <0.010 | <0.010 | 0.023 | 0.042 | 0.33 | 0.32 | 4.2 | 7.4 |
| MTBE | 0.012 | (5) | <0.001 | <0.010 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.020 | <0.020 | <0.010 | <0.010 | <0.002 | <0.005 | <0.096 | <0.001 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | 1.3 | 1.7 | 0.34 | 0.76 | 0.77 | 2.8 | 1.2 | 2.8 | <0.20 | 0.23 | <0.2 | 0.23 | 0.31 | 0.31 | 0.6 | 2.5 |
| Gasoline Range Organics | - | - | --- | --- | 1.1 | 1.90 | --- | --- | --- | --- | --- | --- | 6.1 | 16 | --- | --- | --- | --- |
| 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 |

| | | | OW 0+60 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | --- | --- | --- | --- | --- | --- | <0.005 | <0.005 |
| Toluene | 0.750 | (3) | --- | --- | --- | --- | --- | --- | <0.020 | <0.005 |
| Ethylbenzene | 0.700 | (2) | --- | --- | --- | --- | --- | --- | <0.020 | <0.005 |
| Xylene | 0.620 | (3) | --- | --- | --- | --- | --- | --- | <0.060 | <0.015 |
| MTBE | 0.012 | (5) | --- | --- | --- | --- | --- | --- | <0.020 | <0.005 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | --- | --- | --- | --- | --- | --- | 160 | 38 |
| Gasoline Range Organics | - | - | --- | --- | --- | --- | --- | --- | 3.5 | 2.3 |
| Motor Oil Range Organics | - | - | --- | --- | --- | --- | --- | --- | <2.5 | <2.5 |

| | | | OW 1+50 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | --- | --- | --- | --- | --- | --- | --- | 0.029 |
| Toluene | 0.750 | (3) | --- | --- | --- | --- | --- | --- | --- | 0.014 |
| Ethylbenzene | 0.700 | (2) | --- | --- | --- | --- | --- | --- | --- | 0.31 |
| Xylene | 0.620 | (3) | --- | --- | --- | --- | --- | --- | --- | 5.7 |
| MTBE | 0.012 | (5) | --- | --- | --- | --- | --- | --- | --- | <0.01 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | --- | --- | --- | --- | --- | --- | --- | 1100 |
| Gasoline Range Organics | - | - | --- | --- | --- | --- | --- | --- | --- | 43 |
| Motor Oil Range Organics | - | - | --- | --- | --- | --- | --- | --- | --- | <2.5 |

| | | | OW 3+85 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | --- | <0.010 | --- | --- | --- | --- | 0.007 | 0.018 |
| Toluene | 0.750 | (3) | --- | <0.010 | --- | --- | --- | --- | <0.005 | <0.01 |
| Ethylbenzene | 0.700 | (2) | --- | 0.039 | --- | --- | --- | --- | 0.16 | 0.32 |
| Xylene | 0.620 | (3) | --- | <0.020 | --- | --- | --- | --- | 0.23 | 0.47 |
| MTBE | 0.012 | (5) | --- | <0.010 | --- | --- | --- | --- | <0.005 | <0.01 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | --- | 43 | --- | --- | --- | --- | 120 | 860 |
| Gasoline Range Organics | - | - | --- | 7.7 | --- | --- | --- | --- | 7.4 | 7.4 |
| Motor Oil Range Organics | - | - | --- | 5.1 | --- | --- | --- | --- | <2.5 | <2.5 |

| | | | OW 5+50 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | --- | --- | --- | --- | --- | --- | <0.005 | --- |
| Toluene | 0.750 | (3) | --- | --- | --- | --- | --- | --- | <0.01 | --- |
| Ethylbenzene | 0.700 | (2) | --- | --- | --- | --- | --- | --- | <0.01 | --- |
| Xylene | 0.620 | (3) | --- | --- | --- | --- | --- | --- | <0.030 | --- |
| MTBE | 0.012 | (5) | --- | --- | --- | --- | --- | --- | <0.01 | --- |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | --- | --- | --- | --- | --- | --- | 150 | --- |
| Gasoline Range Organics | - | - | --- | --- | --- | --- | --- | --- | 1.9 | --- |
| Motor Oil Range Organics | - | - | --- | --- | --- | --- | --- | --- | <2.5 | --- |

| | | | OW 6+70 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | 0.750 | (3) | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | 0.700 | (2) | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene | 0.620 | (3) | --- | --- | --- | --- | --- | --- | --- | --- |
| MTBE | 0.012 | (5) | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | --- | --- | --- | --- | --- | --- | --- | --- |
| Gasoline Range Organics | - | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Motor Oil Range Organics | - | - | --- | --- | --- | --- | --- | --- | --- | --- |

| | | | OW 8+10 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | 0.750 | (3) | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | 0.700 | (2) | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene | 0.620 | (3) | --- | --- | --- | --- | --- | --- | --- | --- |
| MTBE | 0.012 | (5) | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | --- | --- | --- | --- | --- | --- | --- | --- |
| Gasoline Range Organics | - | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Motor Oil Range Organics | - | - | --- | --- | --- | --- | --- | --- | --- | --- |

| | | | OW 11+15 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | --- | --- | --- | --- | 0.22 | --- | --- | 0.15 |
| Toluene | 0.750 | (3) | --- | --- | --- | --- | <0.01 | --- | --- | <0.01 |
| Ethylbenzene | 0.700 | (2) | --- | --- | --- | --- | <0.01 | --- | --- | 0.23 |
| Xylene | 0.620 | (3) | --- | --- | --- | --- | <0.03 | --- | --- | <0.03 |
| MTBE | 0.012 | (5) | --- | --- | --- | --- | 0.69 | --- | --- | 1.3 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | --- | --- | --- | --- | 33 | --- | --- | 1500 |
| Gasoline Range Organics | - | - | --- | --- | --- | --- | 2.8 | --- | --- | 2.5 |
| Motor Oil Range Organics | - | - | --- | --- | --- | --- | <2.5 | --- | --- | <2.5 |

| | | | OW 14+10 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | 0.750 | (3) | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | 0.700 | (2) | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene | 0.620 | (3) | --- | --- | --- | --- | --- | --- | --- | --- |
| MTBE | 0.012 | (5) | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | --- | --- | --- | --- | --- | --- | --- | --- |
| Gasoline Range Organics | - | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Motor Oil Range Organics | - | - | --- | --- | --- | --- | --- | --- | --- | --- |

| | | | OW 16+60 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | <0.010 | <0.01 | 0.017 | 0.022 | 0.082 | 0.079 | 0.27 | 0.49 |
| Toluene | 0.750 | (3) | <0.010 | <0.01 | <0.01 | <0.01 | <0.01 | <0.010 | <0.01 | <0.005 |
| Ethylbenzene | 0.700 | (2) | 0.011 | 0.014 | 0.027 | 0.026 | 0.045 | 0.044 | 0.15 | 0.43 |
| Xylene | 0.620 | (3) | <0.02 | <0.02 | <0.02 | <0.02 | 0.058 | <0.003 | 0.066 | 0.14 |
| MTBE | 0.012 | (5) | 0.70 | 0.81 | 0.610 | 0.530 | 0.81 | 1.1 | 0.84 | 1.5 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | 7.5 | 3.5 | 110 | 22.0 | 20 | 65 | 11 | 280 |
| Gasoline Range Organics | - | - | 1.8 | 2.2 | 4.1 | 3.8 | 4.8 | 7.8 | 5.8 | 12 |
| Motor Oil Range Organics | - | - | <2.5 | <2.5 | <25 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 |

| | | | OW 19+50 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | --- | --- | --- | --- | --- | --- | <0.001 | <0.001 |
| Toluene | 0.750 | (3) | --- | --- | --- | --- | --- | --- | <0.001 | <0.001 |
| Ethylbenzene | 0.700 | (2) | --- | --- | --- | --- | --- | --- | <0.001 | <0.001 |
| Xylene | 0.620 | (3) | --- | --- | --- | --- | --- | --- | <0.003 | <0.003 |
| MTBE | 0.012 | (5) | --- | --- | --- | --- | --- | --- | 0.055 | 0.057 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | --- | --- | --- | --- | --- | --- | 2.2 | 1.2 |
| Gasoline Range Organics | - | - | --- | --- | --- | --- | --- | --- | 0.065 | 0.076 |
| Motor Oil Range Organics | - | - | --- | --- | --- | --- | --- | --- | <2.5 | <2.5 |

| | | | OW 22+00 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | <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 |
| Ethylbenzene | 0.700 | (2) | <0.001 | <0.001 | --- | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Xylene | 0.620 | (3) | <0.002 | <0.002 | --- | <0.002 | <0.002 | <0.003 | <0.003 | <0.003 |
| MTBE | 0.012 | (5) | 0.02 | 0.023 | --- | 0.051 | 0.17 | 0.061 | 0.34 | <0.001 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | 0.60 | < 0.20 | --- | <0.2 | 0.36 | <0.20 | 0.41 | 0.28 |
| Gasoline Range Organics | - | - | < 0.050 | < 0.050 | --- | 0.09 | 0.25 | 0.11 | 0.37 | <0.05 |
| Motor Oil Range Organics | - | - | < 2.5 | < 2.5 | --- | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 |

| | | | OW 23+10 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 2.5 | 0.081 |
| Toluene | 0.750 | (3) | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.005 | <0.005 |
| Ethylbenzene | 0.700 | (2) | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.028 | <0.005 |
| Xylene | 0.620 | (3) | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.003 | <0.015 | <0.015 |
| MTBE | 0.012 | (5) | 0.001 | <0.001 | 0.002 | <0.001 | 0.0032 | 0.0015 | <0.005 | <0.005 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | 1.2 | < 0.20 | <0.2 | <0.2 | <0.20 | 0.63 | 1.8 | 2.5 |
| Gasoline Range Organics | - | - | 0.28 | 0.19 | 0.35 | 0.17 | 0.25 | 0.31 | 5.7 | 0.45 |
| Motor Oil Range Organics | - | - | < 2.5 | < 2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 |

| | | | OW 23+90 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | 12-Aug | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | <0.001 | 0.0012 | <0.001 | <0.001 | <0.001 | 0.003 | 3.1 | 0.76 |
| Toluene | 0.750 | (3) | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.009 |
| Ethylbenzene | 0.700 | (2) | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.071 | 0.0082 |
| Xylene | 0.620 | (3) | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.003 | <0.003 | 0.011 |
| MTBE | 0.012 | (5) | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | 0.32 | 0.71 | <0.2 | <0.2 | <0.20 | <0.20 | 1.0 | 0.31 |
| Gasoline Range Organics | - | - | 0.091 | <0.05 | 0.31 | <0.05 | 0.34 | 0.11 | 7.4 | 2.3 |
| Motor Oil Range Organics | - | - | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 |

| | | | OW 25+70 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l)** | | | | | | | | | | |
| Benzene | 0.005 | (2) | <0.001 | <0.001 | <0.001 | <0.001 | 0.11 | 4.4 | 6.6 | 15 |
| Toluene | 0.750 | (3) | <0.001 | <0.001 | <0.001 | <0.001 | <0.020 | <0.1 | 0.12 | 0.11 |
| Ethylbenzene | 0.700 | (2) | <0.001 | <0.001 | <0.001 | <0.001 | <0.020 | 0.3 | 0.71 | 0.75 |
| Xylene | 0.620 | (3) | <0.002 | <0.002 | <0.002 | <0.002 | <0.040 | <0.3 | <0.060 | 1.4 |
| MTBE | 0.012 | (5) | <0.001 | <0.001 | <0.001 | <0.001 | <0.020 | <0.1 | <0.020 | <0.02 |
| **Total Petroleum Hydrocarbons (mg/l):** | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | <0.20 | <0.2 | <0.2 | <0.2 | <0.20 | 0.4 | 0.83 | 1.2 |
| Gasoline Range Organics | - | - | 0.083 | 0.11 | 0.21 | 0.24 | 0.85 | 12 | 20 | 50 |
| Motor Oil Range Organics | - | - | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 |

**Notes:**

(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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 TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels
- = No screening level available
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
--- = Analyte inadvertently not included in sample analysis.
--- = Analysis not required and/or well contains separate phase
= Analytical result exceeds the respective screening level.

--- = Analysis not required and/or well contains separate phase
= Analytical result exceeds the respective screening level.

**TABLE 8**
**Outfalls Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | East Outfall #2 | | | | | | | | East Outfall #3 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (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 | 0.75 | (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 | <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 | <0.001 |
| Xylene | 0.62 | (3) | <0.002 | <0.002 | <0.002 | <0.002 | <0.003 | <0.002 | <0.003 | <0.003 | <0.002 | <0.002 | <0.002 | <0.002 | <0.003 | <0.002 | <0.003 | <0.003 |
| MTBE | 0.125 | (5) | <0.001 | <0.001 | <0.001 | <0.001 | <0.0015 | <0.001 | <0.0015 | <0.0015 | <0.001 | <0.001 | <0.001 | <0.001 | <0.0015 | <0.001 | <0.0015 | <0.0015 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | **0.57** | **0.51** | **0.22** | **0.55** | <0.50 | **0.57** | **0.57** | **0.58** | <0.50 | **0.39** | **0.2** | **0.41** | **0.22** | **0.42** | **0.42** | **0.26** |
| Chloride | 250 | (3) | **15** | **8.1** | **2.5** | **8.7** | **3.80** | **11.00** | **11.00** | **11.0** | **4.0** | **12** | **2.8** | **16.0** | **3.10** | **21.00** | **21.00** | **7.7** |
| Nitrite | 1 | (2) | **2.5*** | < 0.10* | < 0.10 | <0.1 | <0.10 | <0.10 | <0.10 | <0.10 | **24*** | **1.6*** | < 0.1 | <0.1 | <0.10 | <0.10 | <0.10 | <0.10 |
| Bromide | - | - | < 0.10 | < 0.10 | < 0.10 | <0.1 | <0.10 | **0.21** | **0.21** | <0.10 | <0.50 | <0.10 | < 0.1 | **0.14** | <0.10 | **0.15** | **0.15** | <0.10 |
| Nitrate | 10 | (3) | **2.5*** | < 0.10* | < 0.10 | **0.54** | <0.50 | **1.40** | **1.40** | **1.40** | **24*** | **1.6*** | **0.13** | **2.8** | <0.10 | **3.20** | **3.20** | **0.57** |
| Phosphorus | - | - | <0.50 | < 0.5 | < 0.5 | <0.5 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | <0.50 | < 0.5 | <0.5 | <0.50 | <0.50 | <0.50 | <0.50 |
| Sulfate | 600 | (3) | **77** | **74** | **46** | **71** | **46.00** | **76.00** | **76.00** | **110.00** | **56.0** | **93** | **46** | **120** | **51** | **170** | **170** | **110** |
| Carbon Dioxide ($CO_2$) | - | - | **310** | **320** | **91** | **330** | **93** | **350** | **350** | **240** | **110.0** | **290** | **80** | **310** | **86** | **300** | **300** | **110** |
| Alkalinity ($CaCO_3$) | - | - | **330** | **340** | **100** | **360** | **100** | **390** | **390** | **270** | **120** | **300** | **89** | **340** | **96** | **330** | **330** | **120** |
| Bicarbonate ($CaCO_3$) | - | - | **330** | **340** | **100** | **360** | **100** | **390** | **390** | **270** | **120** | **300** | **89** | **340** | **96** | **330** | **330** | **120** |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | <0.020 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.020 | <0.020 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Barium | 1 | (3) | **0.084** | **0.16** | **0.05** | **0.15** | **0.012** | **0.085** | **0.085** | **0.058** | **0.068** | **0.064** | **0.062** | **0.057** | **0.069** | **0.058** | **0.058** | **0.064** |
| Cadmium | 0.005 | (2) | <0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.0020 | <0.0020 | <0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | <0.0060 | <0.006 | <0.006 | **0.0061** | <0.006 | <0.006 | <0.006 | <0.006 | <0.0060 | <0.0060 | <0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Lead | 0.015 | (2) | <0.0050 | <0.005 | <0.005 | **0.0056** | <0.005 | <0.005 | <0.005 | <0.005 | <0.0050 | <0.0050 | <0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Selenium | 0.05 | (2) | <0.050 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.050 | <0.050 | <0.050 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Silver | 0.05 | (3) | <0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.0050 | <0.0050 | <0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | <0.00020 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.00020 | <0.00020 | <0.00020 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | <0.020 | **0.0014** | <0.001 | <0.001 | <0.02 | <0.001 | <0.02 | <0.02 | <0.020 | <0.0010 | <0.0010 | <0.0010 | <0.02 | <0.0010 | <0.02 | <0.02 |
| Barium | 1 | (3) | **0.081** | **0.11** | **0.047** | **0.100** | **0.064** | **0.085** | **0.085** | **0.056** | **0.063** | **0.060** | **0.053** | **0.060** | **0.066** | **0.059** | **0.059** | **0.063** |
| Cadmium | 0.01 | (3) | <0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.0020 | <0.0020 | <0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Calcium | - | - | **87** | **92** | **34** | **84** | **36** | **100** | **100** | **86** | **39** | **86** | **32** | **90** | **37** | **110** | **110** | **59** |
| Chromium | 0.05 | (3) | <0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.0060 | <0.0060 | <0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Copper | 1 | (3) | <0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.030 | <0.006 | <0.006 | <0.0060 | <0.0060 | <0.0060 | <0.006 | <0.006 | <0.030 | <0.006 | <0.006 |
| Iron | 1 | (3) | <0.020 | **0.076** | **0.082** | **0.17** | <0.02 | <0.02 | <0.02 | <0.02 | <0.020 | <0.020 | <0.020 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Lead | 0.05 | (3) | <0.0050 | <0.001 | <0.005 | <0.001 | <0.005 | <0.005 | <0.005 | <0.005 | <0.0050 | <0.0010 | <0.0050 | <0.001 | <0.005 | <0.005 | <0.005 | <0.005 |
| Magnesium | - | - | **20** | **19** | **6.1** | **18** | **6.8** | **22** | **22** | **18** | **7.1** | **17** | **5.7** | **18** | **6.8** | **23** | **23** | **11** |
| Manganese | 0.2 | (3) | **0.010** | **0.072** | **0.029** | **0.045** | **0.014** | **0.0032** | **0.0032** | <.002 | <0.0020 | <0.010 | <0.010 | <0.002 | **0.0025** | <0.002 | <0.002 | <0.002 |
| Mercury | - | - | <0.0002 | <0.0002 | --- | --- | --- | --- | --- | --- | <0.00020 | <0.00020 | --- | --- | --- | --- | --- | --- |
| Potassium | - | - | **1.8** | **2.0** | **1.2** | **1.6** | **1.5** | **1.9** | **1.9** | **1.7** | **1.6** | **2.2** | **1.5** | **1.6** | **1.7** | **2.1** | **2.1** | **1.8** |
| Selenium | 0.05 | (3) | <0.050 | **0.0016** | < 0.001 | **0.0013** | <0.05 | **0.0031** | **0.0031** | <0.05 | <0.050 | 0.0028 | <0.0010 | **0.0035** | <0.05 | **0.0054** | **0.0054** | <0.05 |
| Silver | 0.05 | (3) | < 0.0050 | < 0.005 | < 0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.0050 | <0.010 | <0.010 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Sodium | - | - | **59** | **55** | **16** | **66** | **17** | **62** | **62** | **55** | **21** | **60** | **15.0** | **64** | **17** | **82** | **82** | **30** |
| Uranium | 0.03 | (3) | <0.10 | --- | < 0.001 | **0.0045** | **0.001** | **0.0049** | **0.0049** | --- | <0.10 | 0.0034 | <0.0010 | **0.0046** | <0.001 | **0.0045** | **0.0045** | --- |
| Zinc | 10 | (3) | <0.020 | <0.01 | **0.012** | **0.13** | **0.18** | <0.05 | <0.05 | <0.05 | <0.020 | <0.010 | **0.024** | **0.02** | **0.075** | <0.010 | <0.05 | <0.05 |

**Notes:** (1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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 TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels
- = No screening level available
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
--- = Analyte inadvertently not included in sample analysis.
--- = Analysis not required and/or well contains separate phase

**TABLE 9**
**Seeps Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | Seep #1 | | | | | | | | Seep #2 | | | | | | | Seep #3 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-13 | Apr-13 | Aug-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Benzene | 0.005 | (2) | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.005 | <0.001 | <0.001 | <0.001 | — | — | — | <0.005 | — | <0.001 | <0.001 | <0.001 | — | <0.001 | — | <0.005 | <0.001 | <0.001 |
| Toluene | 0.750 | (3) | <0.001 | <0.001 | <0.001 | <0.001 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | — | — | — | <0.005 | — | <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 | <0.005 | <0.001 | <0.001 | <0.001 | — | — | — | <0.005 | — | <0.001 | <0.001 | <0.001 | — | <0.001 | — | <0.005 | <0.001 | <0.001 |
| Xylene | 0.620 | (3) | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.01 | <0.002 | <0.003 | <0.002 | — | — | — | <0.01 | — | <0.003 | <0.002 | <0.002 | — | <0.002 | — | <0.01 | <0.002 | <0.003 |
| MTBE | 0.125 | (5) | <0.001 | 0.047 | <0.001 | 0.027 | <0.001 | 0.062 | <0.001 | 0.073 | <0.001 | — | — | — | <0.005 | — | 0.0077 | <0.001 | 0.0017 | — | 0.0037 | — | 0.013 | <0.001 | 0.011 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 1,3-Dichlorobenzene | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 21 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | — | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | — | < 21 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2-Chlorophenol | 1.83E+02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2-Methylphenol | 1.80E+03 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2-Nitroaniline | 1.10E+02 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 2-Nitrophenol | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 3,3'-Dichlorobenzidine | 1.50E-01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 3+4-Methylphenol | 1.80E+02 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 3-Nitroaniline | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 4,6-Dinitro-2-methylphenol | - | - | — | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | — | < 21 |
| 4-Bromophenyl phenyl ether | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 4-Chloro-3-methylphenol | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 4-Chloroaniline | 3.40E-01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 4-Chlorophenyl phenyl ether | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 4-Nitroaniline | 3.40E+00 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| 4-Nitrophenol | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Acenaphthene | 2.19E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Acenaphthylene | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Aniline | 1.20E+01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Anthracene | 1.10E+04 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Azobenzene | 1.20E-01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Benz(a)anthracene | 9.21E-01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Benzo(a)pyrene | 2.00E-01 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Benzo(g,h,i)perylene | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Benzoic acid | 1.50E+05 | (1) | — | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | — | < 21 |
| Benzyl alcohol | 1.80E+04 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Carbazole | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Chrysene | 9.21E+01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Dibenzofuran | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Diethyl phthalate | 2.92E+04 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Dimethyl phthalate | 3.65E+05 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Di-n-octyl phthalate | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Fluoranthene | 1.46E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Fluorene | 1.46E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Hexachlorobenzene | 1.00E+00 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Hexachlorobutadiene | 8.60E-01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Hexachloroethane | 3.65E+01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Isophorone | 7.07E+02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Naphthalene | 1.43E+00 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Nitrobenzene | 1.49E+01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Pentachlorophenol | 1.00E+00 | (2) | — | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | — | < 21 |
| Phenanthrene | 1.10E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Phenol | 5.00E+00 | (3) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Pyrene | 1.10E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |
| Pyridine | 3.70E+01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 11 |

| | | | Seep #6 | | | | | | | | Seep #9 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **Volatile Organic Compounds (mg/l):** | | | | | | | | | | | | | | | | | | |
| Benzene | 0.005 | (2) | <0.001 | <0.001 | — | <0.001 | — | <0.005 | <0.001 | <0.001 | — | <0.001 | — | <0.001 | — | <0.005 | — | <0.001 |
| Toluene | 0.750 | (3) | <0.001 | <0.001 | — | <0.001 | — | <0.005 | <0.001 | <0.001 | — | <0.001 | — | <0.001 | — | <0.001 | — | <0.001 |
| Ethylbenzene | 0.700 | (2) | <0.001 | <0.001 | — | <0.001 | — | <0.005 | <0.001 | <0.001 | — | <0.001 | — | <0.001 | — | <0.005 | — | <0.001 |
| Xylene | 0.620 | (3) | <0.002 | <0.002 | — | <0.002 | — | <0.01 | <0.002 | <0.003 | — | <0.002 | — | <0.002 | — | <0.01 | — | <0.003 |
| MTBE | 0.125 | (5) | <0.001 | 0.0019 | — | 0.0026 | — | 0.007 | <0.001 | 0.006 | — | 0.07 | — | 0.071 | — | 0.039 | — | 0.027 |
| **Semi Volatile Organic Compounds (ug/l):** | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 7.00E+01 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 1,2-Dichlorobenzene | 6.00E+02 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 1,3-Dichlorobenzene | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 1,4-Dichlorobenzene | 7.50E+01 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 1-Methylnaphthalene | 2.30E+00 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2,4,5-Trichlorophenol | 3.65E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2,4,6-Trichlorophenol | 3.65E+01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2,4-Dichlorophenol | 1.10E+02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 20 |
| 2,4-Dimethylphenol | 7.30E+02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2,4-Dinitrophenol | 7.30E+01 | (5) | — | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | — | < 20 |
| 2,4-Dinitrotoluene | 2.17E+00 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2,6-Dinitrotoluene | 3.70E+01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2-Chloronaphthalene | 2.90E+03 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2-Chlorophenol | 1.83E+02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2-Methylnaphthalene | 1.50E+02 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2-Methylphenol | 1.80E+03 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2-Nitroaniline | 1.10E+02 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 2-Nitrophenol | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 3,3'-Dichlorobenzidine | 1.50E-01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 3+4-Methylphenol | 1.80E+02 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 3-Nitroaniline | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 4,6-Dinitro-2-methylphenol | - | - | — | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | — | < 20 |
| 4-Bromophenyl phenyl ether | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 4-Chloro-3-methylphenol | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 4-Chloroaniline | 3.40E-01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 4-Chlorophenyl phenyl ether | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 4-Nitroaniline | 3.40E+00 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| 4-Nitrophenol | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Acenaphthene | 2.19E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Acenaphthylene | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Aniline | 1.20E+01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Anthracene | 1.10E+04 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Azobenzene | 1.20E-01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Benz(a)anthracene | 9.21E-01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Benzo(a)pyrene | 2.00E-01 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Benzo(b)fluoranthene | 9.21E-01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Benzo(g,h,i)perylene | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Benzo(k)fluoranthene | 9.21E+00 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Benzoic acid | 1.50E+05 | (1) | — | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | — | < 20 |
| Benzyl alcohol | 1.80E+04 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Bis(2-chloroethoxy)methane | 1.10E+02 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Bis(2-chloroethyl)ether | 1.19E-01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Bis(2-chloroisopropyl)ether | 9.60E+00 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Bis(2-ethylhexyl)phthalate | 6.00E+00 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Butyl benzyl phthalate | 3.50E+01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Carbazole | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Chrysene | 9.21E+01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Dibenz(a,h)anthracene | 9.21E-02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Dibenzofuran | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Diethyl phthalate | 2.92E+04 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Dimethyl phthalate | 3.65E+05 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Di-n-butyl phthalate | 3.65E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Di-n-octyl phthalate | - | - | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Fluoranthene | 1.46E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Fluorene | 1.46E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Hexachlorobenzene | 1.00E+00 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Hexachlorobutadiene | 8.60E-01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Hexachlorocyclopentadiene | 5.00E+01 | (2) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Hexachloroethane | 3.65E+01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Indeno(1,2,3-cd)pyrene | 2.90E-02 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Isophorone | 7.07E+02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Naphthalene | 1.43E+00 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Nitrobenzene | 1.49E+01 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| N-Nitrosodimethylamine | 1.32E-02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| N-Nitrosodi-n-propylamine | 9.60E-03 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| N-Nitrosodiphenylamine | 1.37E+02 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Pentachlorophenol | 1.00E+00 | (2) | — | — | — | — | — | — | — | < 20 | — | — | — | — | — | — | — | < 20 |
| Phenanthrene | 1.10E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Phenol | 5.00E+00 | (3) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Pyrene | 1.10E+03 | (5) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |
| Pyridine | 3.70E+01 | (1) | — | — | — | — | — | — | — | < 10 | — | — | — | — | — | — | — | < 10 |

**TABLE 9**
**Seeps Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | Seep #1 | | | | | | | | Seep #2 | | | | | | | Seep #3 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-13 | Apr-13 | Aug-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | <1.0 | < 0.50 | 0.22 | 0.17 | 0.43 | 0.49 | 0.32 | 0.19 | 0.57 | — | — | — | 1.4 | — | 0.83 | <0.50 | < 0.50 | — | 0.14 | — | 0.39 | 0.7 | 0.21 |
| Chloride | 250 | (3) | 190 | 220 | 310 | 190 | 350 | 230 | 380 | 220 | 15 | — | — | — | 890 | — | 640 | 4.0 | 220 | — | 220 | — | 280 | 6000 | 370 |
| Nitrite | 1.0 | (2) | <1.0 | < 0.50 | <0.10 | <0.1 | <2.0 | <0.10 | <0.10 | <0.10 | 2.5* | — | — | — | <2.0 | — | 0.69 | 24* | < 0.50 | — | <0.10 | — | <2.0 | <0.50 | <0.10 |
| Bromide | - | - | 2.3 | 2.1 | 2.8 | 1.7 | 2.70 | 1.70 | 2.3 | 1.5 | <0.10 | — | — | — | 9.40 | — | 7.5 | <0.50 | 2.2 | — | 1.9 | — | 2.00 | 9.9 | 2.1 |
| Nitrate | 10 | (3) | <1.0 | < 0.50 | <0.10 | <0.1 | <2.0 | <2.0 | <2.0 | <2.0 | 2.5* | — | — | — | 2.60 | — | <2.0 | 24* | < 0.50 | — | <0.10 | — | <0.10 | <2.0 | <2.0 |
| Phosphorus | - | - | <5.0 | < 2.5 | <10 | <0.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | — | — | — | <0.50 | — | <10.0 | <2.5 | < 10 | — | <10.0 | — | <0.50 | <0.50 | <0.50 |
| Sulfate | 600 | (6) | 1200 | 1700 | 1600 | 1700 | 1900 | 1700 | 1800 | 1600 | 77 | — | — | — | 7300 | — | 5000 | 56 | 2000 | — | 2100 | — | 50 | 1800 | 2500 |
| Carbon Dioxide ($CO_2$) | - | - | 250 | 430 | 220 | 360 | 250 | 400 | 260 | 360 | 310 | — | — | — | 150 | — | 110 | 110 | 320 | — | 290 | — | 360 | 240 | 330 |
| Alkalinity ($CaCO_3$) | - | - | 280 | 470 | 250 | 400 | 280 | 440 | 260 | 360 | 330 | — | — | — | 170 | — | 120 | 120 | 360 | — | 330 | — | 400 | 240 | 330 |
| Bicarbonate ($CaCO_3$) | - | - | 280 | 470 | 250 | 400 | 280 | 440 | 260 | 360 | 330 | — | — | — | 170 | — | 120 | 120 | 360 | — | 330 | — | 400 | 240 | 330 |

| | | | Seep #6 | | | | | | | | Seep #9 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | 8700 | 2500 | — | 3800 | — | 2800 | 5400 | 3100 | — | 600 | — | 650 | — | 860 | — | 710 |
| Chloride | 250 | (3) | 5.6 | 1.8 | — | <2.0 | — | 1.4 | 2.9 | 1.00 | — | 2.0 | — | 1.6 | — | 1.40 | — | 0.99 |
| Nitrite | 1.0 | (2) | <10 | < 0.50 | — | <0.1 | — | <2.0 | *<2.0 | <1.0* | — | < 0.50 | — | <2.0 | — | <2.0 | — | <0.10 |
| Bromide | - | - | <1.0 | < 0.50 | — | <0.1 | — | <0.10 | *<2.0 | <1.0* | — | < 0.50 | — | <0.10 | — | <0.10 | — | <2.0 |
| Nitrate | 10 | (3) | <5.0 | < 2.5 | — | <10.0 | — | <0.50 | <2.5 | <0.50 | — | < 2.5 | — | <10 | — | <0.50 | — | <0.50 |
| Phosphorus | - | - | 2800 | 1600 | — | 2100 | — | 1400 | 2000 | 1300 | — | 2000 | — | 2400 | — | 2100 | — | 2000 |
| Sulfate | 600 | (6) | 150 | 300 | — | 320 | — | 320 | 140 | 350 | — | 340 | — | 320 | — | 360 | — | 350 |
| Carbon Dioxide ($CO_2$) | - | - | 160 | 330 | — | 350 | — | 350 | 140 | 350 | — | 360 | — | 320 | — | 390 | — | 350 |
| Alkalinity ($CaCO_3$) | - | - | 160 | 330 | — | 350 | — | 350 | 140 | 350 | — | 360 | — | 320 | — | 390 | — | 350 |
| Bicarbonate ($CaCO_3$) | - | - | | | | | | | | | | | | | | | | |

**Notes:**
(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water
(2) EPA - Regional Screening Levels (April 2009) - 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 TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels
(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time
\- = No screening level available
— = Analysis not required and/or no water present
= Analytical result exceeds the respective screening level.
**Bold Blue** = Detected above laboratory reporting limit

**TABLE 10**
**San Juan River Terrace: San Juan River Analytical Summary**
**2013 Groundwater Remediation Monitoring Annual Report**

| | | | North of MW-46 | | | | | | | | | | North of MW-45 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-09 | Apr-09 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-09 | Apr-09 |
| **e Organic Compounds (mg/l)** | | | | | | | | | | | | | | | | | | | | | | |
| Benzene | 0.005 | (2) | <0.002 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.002 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Toluene | 0.750 | (3) | <0.002 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.002 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Ethylbenzene | 0.700 | (2) | <0.002 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.002 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Xylene | 0.620 | (3) | <0.002 | <0.002 | <0.002 | <0.002 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.002 |
| MTBE | 0.012 | (5) | <0.004 | <0.001 | <0.001 | <0.001 | <0.0015 | <0.0015 | <0.0015 | <0.0015 | <0.0015 | <0.0025 | <0.004 | <0.001 | <0.001 | <0.001 | <0.0015 | <0.0015 | <0.0015 | <0.0015 | <0.0015 | <0.0025 |
| **roleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | (4) | < 0.20 | < 0.20 | < 0.2 | <0.2 | <0.2 | <0.2 | <1.0 | <1.0 | <1.0 | <1.0 | < 0.20 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | <1.0 |
| Gasoline Range Organics | - | - | <0.10 | < 0.05 | < 0.05 | <0.050 | <2.5 | <2.5 | <5.0 | <5.0 | <5.0 | <5.0 | <0.10 | <0.05 | <0.05 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <5.0 | <5.0 |
| Motor Oil Range Organics | - | - | < 2.5 | < 2.5 | < 2.5 | <2.5 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | < 2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <0.050 | <0.050 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | (3) | <0.50 | 0.17 | 0.16 | 0.17 | 0.16 | 0.19 | 0.16 | 0.14 | 0.22 | 0.15 | <0.50 | 0.17 | 0.16 | 0.19 | 0.17 | 0.19 | 0.17 | 0.16 | 0.1 | 0.14 |
| Chloride | 250 | (3) | 3.4 | 4.3 | 2.5 | 2.7 | 2.60 | 3.00 | 3.10 | 3.70 | 3.2 | 3.10 | 3.2 | 3.7 | 2.5 | 2.70 | 2.80 | 2.90 | 3.00 | 3.60 | 3.10 | 3.10 |
| Nitrite | 1.0 | (2) | <0.50 | < 0.10 | < 0.1 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.50 | < 1.0* | < 0.1 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Bromide | - | - | <0.50 | < 0.10 | < 0.1 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.50 | < 0.10 | < 0.1 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Nitrate | 10 | (3) | <0.50 | < 0.10 | < 0.1 | <0.10 | <0.10 | 0.14 | <0.10 | <0.10 | <0.10 | <0.10 | <0.50 | < 1.0* | < 0.1 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Phosphorus | - | - | <2.5 | < 0.50 | < 0.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | < 0.50 | <0.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Sulfate | 600 | -3 | 69 | 73 | 47 | 60 | 49 | 66 | 61 | 72 | 49 | 72 | 69 | 71 | 46 | 61 | 51 | 65 | 60 | 72 | 50 | 72 |
| Carbon Dioxide ($CO_2$) | - | - | --- | 83 | 74 | 76 | --- | 87 | 86 | 84 | 82 | 78 | --- | 83 | 74 | 76 | --- | 84 | 88 | 84 | 83 | 78 |
| Alkalinity ($CaCO_3$) | - | - | 96 | 93 | 83 | 86 | --- | 87 | 86 | 84 | 82 | 87 | 96 | 93 | 83 | 85 | --- | 88 | 84 | 84 | 83 | 87 |
| Total Dissolved Solids | 1000 | (3) | 390 | 235 | 189 | 187 | --- | 198 | 204 | 221 | 180 | 250 | 440 | 233 | 197 | 187 | --- | 186 | 211 | 220 | 193 | 240 |
| Electric Conductivity | - | - | 350 | 350 | 280 | 320 | --- | 330 | 320 | 340 | 310 | 330 | 350 | 350 | 280 | 320 | --- | 330 | 320 | 340 | 280 | 340 |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | (2) | <0.10 | < 0.020 | < 0.02 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.10 | < 0.020 | < 0.02 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Barium | 1.0 | (3) | 2.0 | 0.084 | 0.087 | 0.063 | 0.17 | 0.076 | 0.068 | 0.065 | 0.07 | 0.07 | 2.2 | 0.081 | 0.11 | 0.06 | 0.12 | 0.076 | 0.069 | 0.065 | 0.07 | 0.07 |
| Cadmium | 0.005 | (2) | <0.010 | < 0.0020 | < 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.010 | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Chromium | 0.05 | (3) | 0.26 | < 0.0060 | < 0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | 0.28 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Lead | 0.015 | (2) | 0.059 | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.050 | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Selenium | 0.05 | (2) | <0.25 | < 0.050 | <0.05 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.25 | < 0.050 | < 0.05 | <0.050 | <0.005 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Silver | 0.05 | (3) | <0.025 | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.025 | < 0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Mercury | 0.002 | (3) | 0.00031 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0.0003 | < 0.00020 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | (3) | <0.020 | <0.0010 | <0.001 | <0.001 | <0.001 | <0.001 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.0010 | <0.001 | <0.001 | <0.001 | <0.001 | <0.020 | <0.020 | <0.020 | <0.020 |
| Barium | 1 | (3) | 0.13 | 0.073 | 0.049 | 0.058 | 0.06 | 0.58 | 0.068 | 0.065 | 0.06 | 0.064 | 0.13 | 0.073 | 0.049 | 0.057 | 0.06 | 0.058 | 0.069 | 0.065 | 0.041 | 0.068 |
| Cadmium | 0.01 | (3) | <0.0020 | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.0020 | < 0.0020 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Calcium | - | - | 35 | 38 | 31 | 34 | 32 | 33 | 36 | 35 | 30 | 36 | 34 | 38 | 31 | 34 | 33 | 33 | 35 | 35 | 22 | 35 |
| Chromium | 0.05 | (3) | < 0.0060 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | < 0.0060 | < 0.0060 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Copper | 1.0 | (3) | < 0.0060 | < 0.0060 | <0.006 | <0.0065 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | < 0.0060 | < 0.0060 | <0.006 | 0.0071 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Iron | 1.0 | (3) | 11 | < 0.020 | <0.02 | <0.02 | <0.02 | <0.02 | 0.036 | 0.027 | <0.02 | 0.03 | 9.7 | < 0.020 | <0.02 | <0.02 | <0.02 | <0.02 | 0.036 | 0.026 | <0.02 | 0.032 |
| Lead | 0.05 | (3) | <0.0050 | < 0.0010 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.0050 | < 0.0010 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Magnesium | - | - | 5.2 | 6.4 | 5 | 5.8 | 5.8 | 6.1 | 6 | 6.5 | 5.6 | 6.1 | 5.1 | 6.3 | 5.2 | 5.9 | 5.8 | 6.1 | 6 | 6.5 | 4.1 | 6.1 |
| Manganese | 0.2 | (3) | 0.096 | 0.027 | 0.0045 | 0.016 | 0.0087 | 0.015 | 0.011 | 0.025 | 0.0035 | 0.017 | 0.06 | 0.023 | 0.0047 | 0.016 | 0.0079 | 0.015 | 0.0099 | 0.025 | 0.004 | 0.18 |
| Mercury | - | - | <0.00020 | < 0.00020 | --- | --- | --- | --- | --- | --- | --- | --- | < 0.00020 | < 0.00020 | --- | --- | --- | --- | --- | --- | --- | --- |
| Potassium | - | - | 3.2 | 2.0 | 1.6 | 1.5 | 1.6 | 1.6 | 1.8 | 1.8 | 1.7 | 1.7 | 3.4 | 2.0 | 1.6 | 1.6 | 1.6 | 1.8 | 1.8 | 1.8 | 1.1 | 1.6 |
| Selenium | 0.05 | (3) | <0.050 | < 0.0010 | <0.001 | <0.001 | <0.001 | <0.001 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | < 0.0010 | <0.001 | <0.001 | <0.001 | <0.001 | <0.050 | <0.050 | <0.050 | <0.050 |
| Silver | 0.05 | (3) | <0.005 | < 0.0050 | <0.005 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | < 0.0050 | <0.005 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| Sodium | - | - | 35 | 26 | 17 | 21 | 16 | 21 | 19 | 25 | 16 | 23 | 39 | 26 | 17 | 22 | 16 | 21 | 19 | 25 | 11 | 22 |
| Uranium | 0.03 | (3) | <0.10 | < 0.0010 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.10 | < 0.0010 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Zinc | 10.0 | (3) | <0.020 | 0.26 | 0.013 | 0.011 | 0.068 | <0.01 | <0.05 | <0.05 | <0.05 | 0.066 | <0.020 | 0.48 | 0.018 | 0.011 | 0.035 | <0.01 | <0.05 | <0.05 | <0.05 | 0.052 |

**TABLE 10**
**San Juan River Terrace: San Juan River Analytical Summary**
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| | | Upstream | | | | | | | | | | Downstream | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-09 | Apr-09 | Aug-13 | Apr-13 | Aug-12 | Apr-12 | Aug-11 | Apr-11 | Aug-10 | Apr-10 | Aug-09 | Apr-09 |
| **e Organic Compounds (mg/l)** | | | | | | | | | | | | | | | | | | | | | |
| Benzene | 0.005 | <0.002 | <0.001 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.002 | <0.001 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Toluene | 0.750 | <0.002 | <0.001 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.002 | <0.001 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Ethylbenzene | 0.700 | <0.002 | <0.001 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.002 | <0.001 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Xylene | 0.620 | <0.002 | <0.002 | <0.002 | < 0.002 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.002 | <0.002 | <0.002 | <0.002 | < 0.002 | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | <0.002 |
| MTBE | 0.012 | <0.004 | <0.001 | <0.001 | < 0.001 | <0.0015 | <0.0015 | <0.0015 | <0.0015 | <0.0015 | <0.0025 | <0.004 | <0.001 | <0.001 | < 0.002 | <0.0015 | <0.0015 | <0.0015 | <0.0015 | <0.0015 | <0.0025 |
| **roleum Hydrocarbons (mg/l):** | | | | | | | | | | | | | | | | | | | | | |
| Diesel Range Organics | 0.2 | < 0.20 | < 0.20 | < 0.20 | < 0.2 | <0.2 | <0.2 | <1.0 | <1.0 | <1.0 | <1.0 | < 0.20 | < 0.20 | < 0.20 | < 0.2 | <0.2 | <0.2 | <1.0 | <1.0 | <1.0 | <1.0 |
| Gasoline Range Organics | - | <0.10 | < 0.050 | < 0.050 | < 0.050 | <2.5 | <2.5 | <5.0 | <5.0 | <5.0 | <5.0 | <0.10 | < 0.050 | < 0.050 | < 0.05 | <2.5 | <2.5 | <5.0 | <5.0 | <5.0 | <5.0 |
| Motor Oil Range Organics | - | < 2.5 | < 2.5 | < 2.5 | < 2.5 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | < 2.5 | < 2.5 | < 2.5 | < 2.5 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| **General Chemistry (mg/l):** | | | | | | | | | | | | | | | | | | | | | |
| Fluoride | 1.6 | <0.50 | 0.18 | 0.17 | 0.10 | 0.17 | 0.19 | 0.18 | 0.15 | 0.23 | 0.15 | <0.50 | 0.18 | 0.16 | 0.1 | 0.17 | 0.2 | 0.16 | 0.16 | 0.22 | 0.18 |
| Chloride | 250 | 3.6 | 4.0 | 2.70 | 2.70 | 2.60 | 2.90 | 3.20 | 3.60 | 3.50 | 3.30 | 3.5 | 4.2 | 2.6 | 3.2 | 2.60 | 3.30 | 3.10 | 3.80 | 2.80 | 3.10 |
| Nitrite | 1.0 | < 0.50 | < 0.10 | < 0.10 | < 0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.50 | < 0.10 | < 0.10 | *< 0.1 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Bromide | - | < 0.50 | < 0.10 | < 0.10 | < 0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.50 | < 0.10 | < 0.10 | < 0.1 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Nitrate | 10 | < 0.50 | < 0.10 | < 0.10 | < 0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.50 | < 0.10 | < 0.10 | *< 0.1 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Phosphorus | - | <2.5 | < 0.50 | < 0.50 | < 0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | < 0.50 | < 0.50 | < 0.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Sulfate | 600 | 79 | 86 | 53 | 62 | 47 | 66 | 60 | 74 | 62 | 73 | 74 | 98 | 51 | 90 | 50 | 87 | 65 | 77 | 44 | 75 |
| Carbon Dioxide ($CO_2$) | - | --- | 86 | 74 | 76 | --- | 87 | 85 | 84 | 83 | 76 | --- | 89 | 74 | 83 | --- | 90 | 86 | 87 | 280 | 78 |
| Alkalinity ($CaCO_3$) | - | 97 | 96 | 83 | 85 | --- | 87 | 85 | 84 | 83 | 85 | 97 | 99 | 83 | 92 | --- | 90 | 86 | 87 | 84 | 87 |
| Total Dissolved Solids | 1000 | 450 | 256 | 201 | 190 | --- | 200 | 203 | 220 | 184 | 250 | 480 | 273 | 201 | 232 | --- | 234 | 206 | 231 | 196 | 280 |
| Electric Conductivity | - | 370 | 390 | 290 | 320 | --- | 320 | 310 | 340 | 270 | 340 | 360 | 410 | 300 | 390.00 | --- | 380 | 320 | 350 | 280 | 350 |
| **Total Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.01 | <0.10 | < 0.020 | <0.020 | < 0.02 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.10 | < 0.020 | <0.020 | < 0.02 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Barium | 1.0 | 2.5 | 0.082 | 0.099 | 0.064 | 0.11 | 0.071 | 0.068 | 0.065 | 0.07 | 0.07 | 2.2 | 0.084 | 0.08 | 0.065 | 0.1 | 0.073 | 0.067 | 0.65 | 0.07 | 0.08 |
| Cadmium | 0.005 | <0.010 | < 0.0020 | <0.002 | < 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.010 | < 0.0020 | <0.002 | < 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Chromium | 0.05 | 0.32 | < 0.0060 | <0.006 | < 0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | 0.29 | < 0.0060 | <0.006 | < 0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Lead | 0.015 | 0.075 | < 0.0050 | <0.005 | <0.0050 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.078 | < 0.0050 | <0.005 | < 0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Selenium | 0.05 | <0.25 | < 0.050 | <0.050 | < 0.05 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.25 | < 0.050 | <0.005 | < 0.05 | <0.005 | <0.005 | <0.050 | <0.050 | <0.050 | <0.050 |
| Silver | 0.05 | <0.025 | < 0.0050 | <0.005 | < 0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.025 | < 0.0050 | <0.005 | < 0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Mercury | 0.002 | 0.00038 | < 0.00020 | <0.0002 | < 0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0.00034 | < 0.00020 | <0.0002 | < 0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| **Dissolved Metals (mg/l):** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | 0.1 | <0.020 | < 0.0010 | < 0.001 | < 0.001 | <0.001 | <0.001 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | < 0.0010 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.020 | <0.020 | <0.020 | <0.020 |
| Barium | 1 | 0.11 | 0.074 | 0.049 | 0.058 | 0.059 | 0.058 | 0.068 | 0.065 | 0.06 | 0.065 | 0.21 | 0.073 | 0.049 | 0.059 | 0.061 | 0.057 | 0.067 | 0.65 | 0.063 | 0.064 |
| Cadmium | 0.01 | <0.0020 | < 0.0020 | <0.002 | < 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.0020 | < 0.0020 | <0.002 | < 0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Calcium | - | 33 | 37 | 31 | 32 | 32 | 33 | 34 | 34 | 28 | 35 | 41 | 45 | 32 | 41 | 34 | 39 | 36 | 36 | 31 | 38 |
| Chromium | 0.05 | <0.0060 | < 0.0060 | <0.006 | < 0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.0060 | < 0.0060 | <0.006 | < 0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Copper | 1.0 | <0.0060 | < 0.0060 | <0.006 | 0.0072 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | 0.0085 | < 0.0060 | <0.006 | < 0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 | <0.006 |
| Iron | 1.0 | 8.0 | < 0.020 | <0.02 | < 0.02 | <0.02 | <0.02 | <0.02 | 0.022 | <0.02 | 0.021 | 40 | < 0.020 | <0.02 | < 0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | 0.04 |
| Lead | 0.05 | <0.0050 | < 0.0010 | <0.005 | < 0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.0050 | < 0.0010 | <0.005 | < 0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Magnesium | - | 4.8 | 6.5 | 5.2 | 5.8 | 5.9 | 6 | 6 | 6.7 | 5.4 | 6.2 | 5.9 | 6.9 | 5.2 | 6 | 6.00 | 6.7 | 6.1 | 6.6 | 5.7 | 6.4 |
| Manganese | 0.2 | 0.073 | 0.033 | 0.0093 | 0.020 | 0.011 | 0.019 | 0.007 | 0.033 | 0.003 | 0.023 | 0.27 | 0.084 | 0.016 | 0.100 | 0.013 | 0.044 | 0.016 | 0.054 | 0.006 | 0.046 |
| Mercury | - | <0.00020 | < 0.00020 | --- | --- | --- | --- | --- | --- | --- | --- | <0.00020 | < 0.00020 | --- | --- | --- | --- | --- | --- | --- | --- |
| Potassium | - | 3.1 | 2.2 | 1.6 | 1.5 | 1.6 | 1.7 | 1.8 | 1.8 | 1.6 | 1.7 | 3.6 | 2.1 | 1.6 | 1 | 1.7 | 1.8 | 1.8 | 1.8 | 1.6 | 1.8 |
| Selenium | 0.05 | <0.050 | < 0.0010 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | < 0.0010 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.050 | <0.050 | <0.050 | <0.050 |
| Silver | 0.05 | <0.0050 | < 0.0050 | <0.0050 | < 0.005 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | < 0.0050 | <0.0050 | < 0.005 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| Sodium | - | 41 | 29 | 19 | 23 | 16 | 22 | 19 | 29 | 14 | 25 | 38 | 31 | 18 | 30 | 17 | 26 | 20 | 26 | 16 | 24 |
| Uranium | 0.03 | <0.10 | < 0.0010 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.10 | < 0.0010 | <0.001 | < 0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Zinc | 10.0 | <0.020 | < 0.010 | 0.064 | 0.011 | 0.045 | <0.01 | <0.05 | <0.05 | <0.05 | 0.12 | 0.037 | < 0.010 | 0.03 | 0.01 | 0.06 | <0.01 | <0.05 | <0.05 | <0.05 | 0.082 |

**Notes:**

(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels.Tap Water

(2) EPA - Regional Screening Levels (April 2009) - 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 TPH Screening Guidelines Oct. 2006 - "unknown oil" - see report Sections 5 and 7 for use on location specific screening levels

(5) NMED TAP Water Screening Levels - 2009 Background Document for Development of Soil Screening Levels

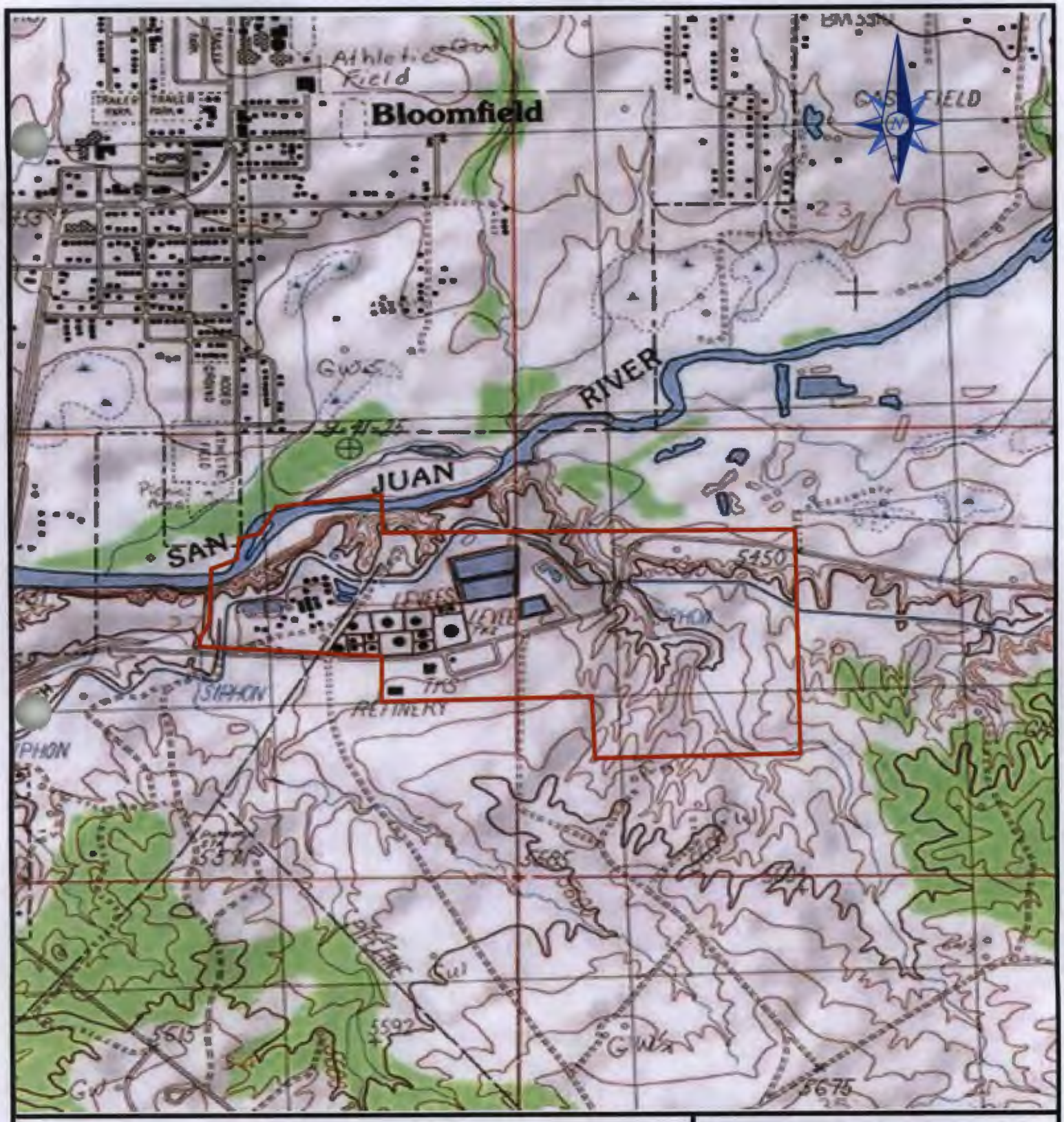
* = Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet hold time

\- = No screening level available

--- = Analyte inadvertently not included in sample analysis.

— = Analysis not required

= Analytical result exceeds the respective screening level.




Approximate Property Boundary

0 500 1000 1500 2000

Feet

Bloomfield New Mexico

Western Refining

Site Location Map
Bloomfield Refinery

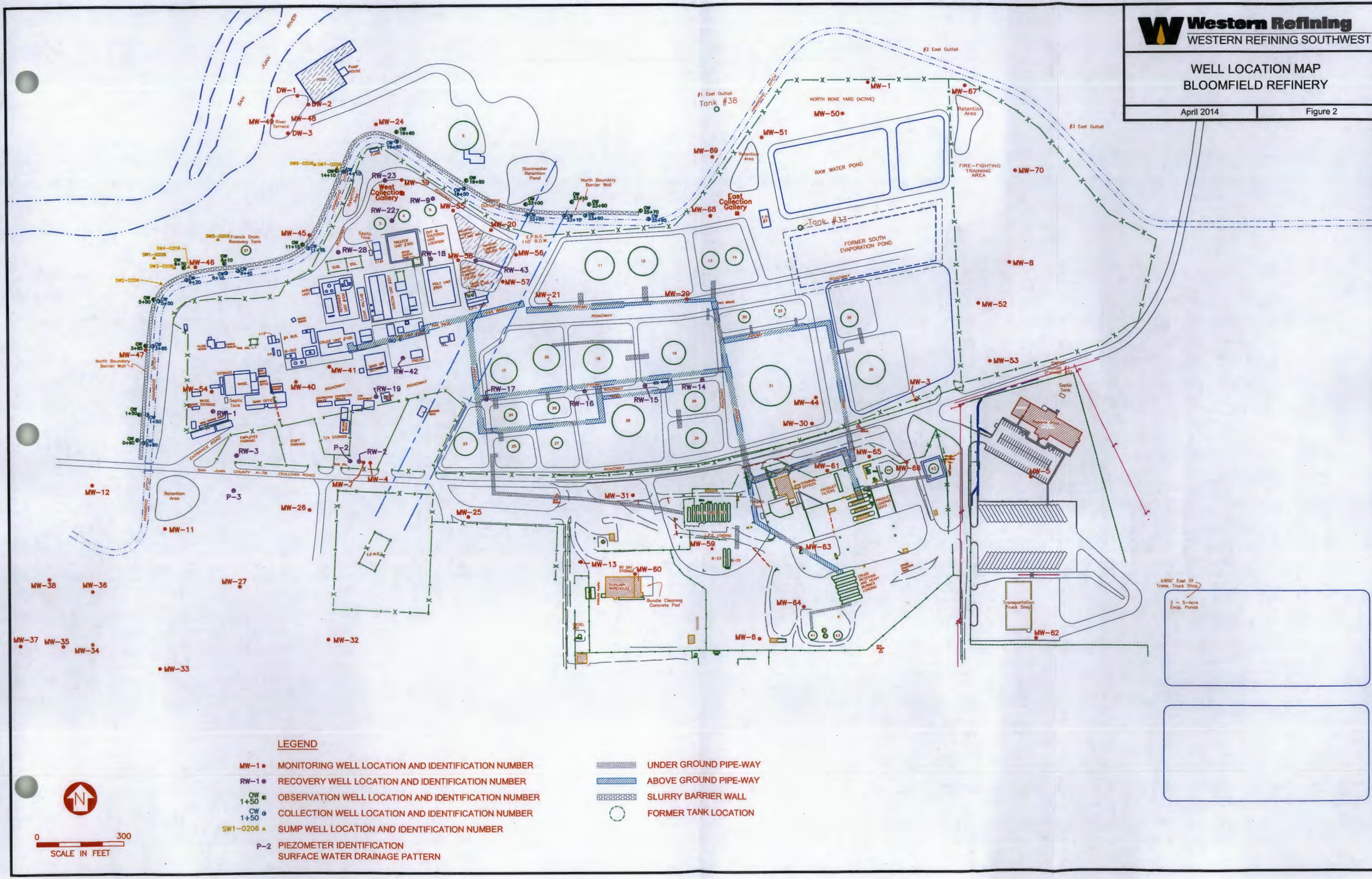
April 2014

Figure 1

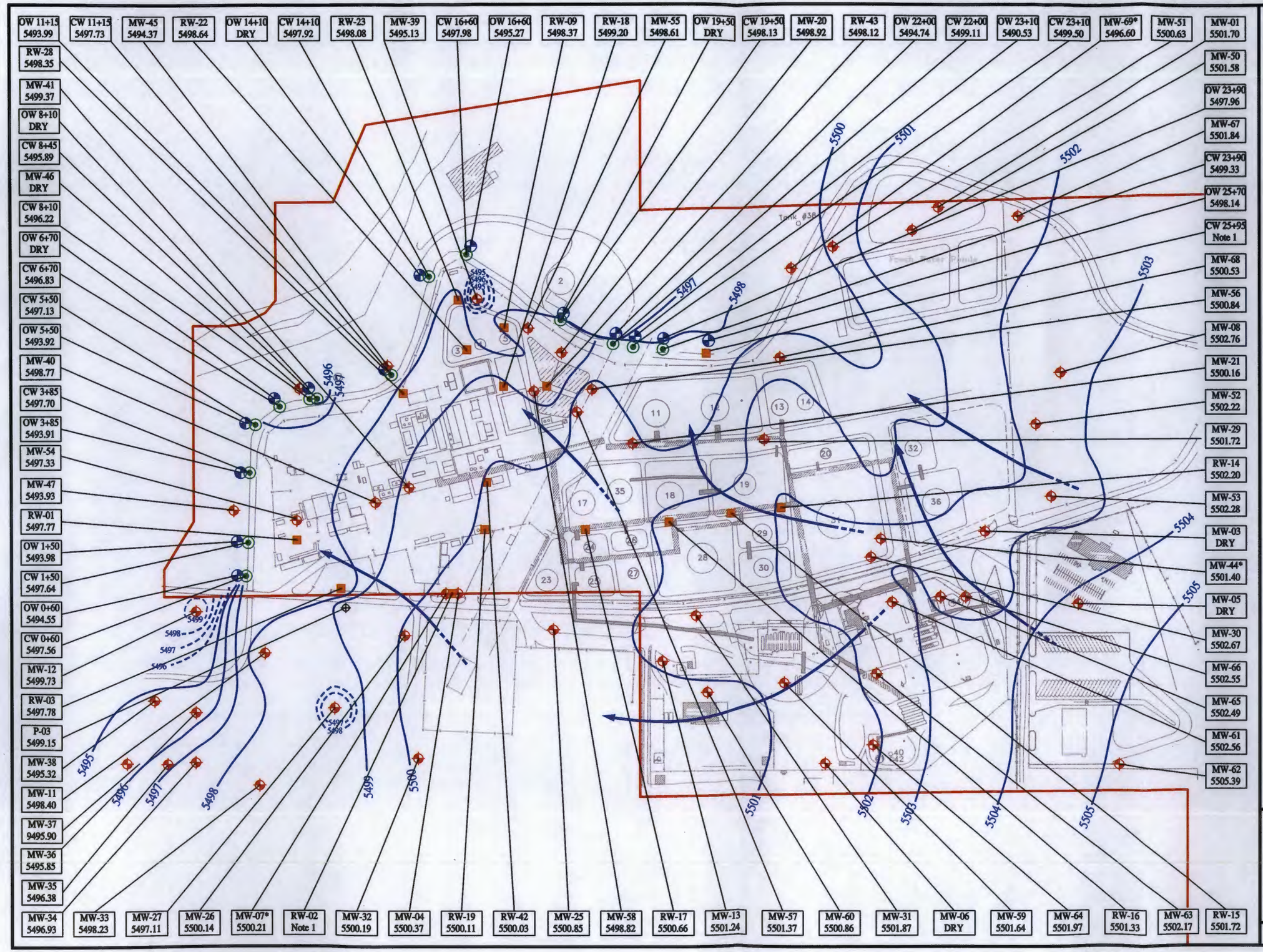
Western Refining
WESTERN REFINING SOUTHWEST

# WELL LOCATION MAP
# BLOOMFIELD REFINERY

April 2014 | Figure 2

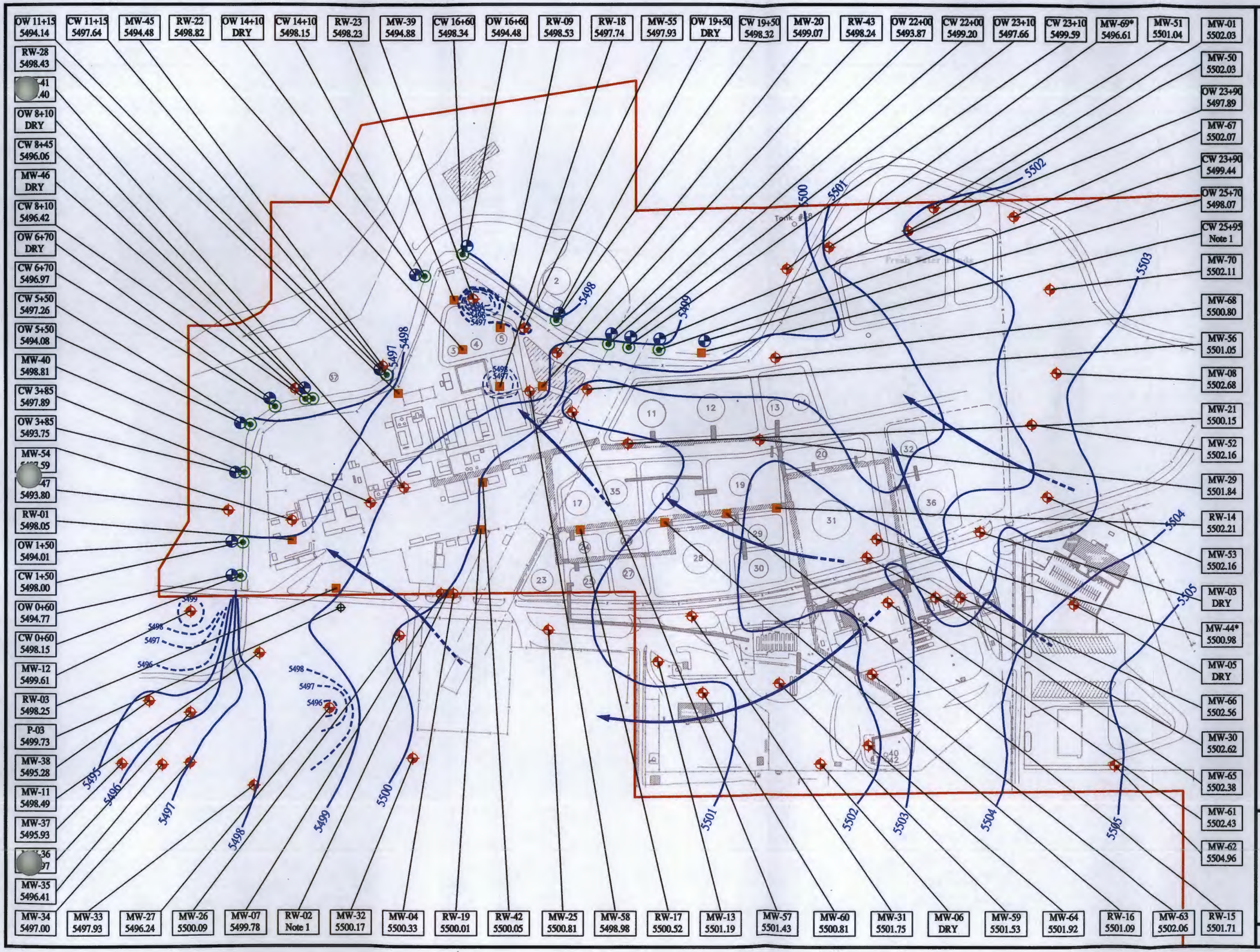



North of 45
Seep 4
SW 6
SW 7
Downstream
Sample Point
North of 46
Seep 9
Seep 3
Seep 2
Seep 1
Seep 7
Seep 5
SW 5
Seep 6
Seep 8
Tank 37
SW 1
SW 3
SW 4
SW 2
Upstream
Sample Point
San Juan River
East Fork
Outfall
Outfall 2
Outfall 3
Outfall 1
(Tank 38)
Downstream
Sample Points
Legend
River Sample Point
Outfall
Seep
Sump Well
N
0 125 250 375 500
Feet
Western Refining
San Juan River
Area Location Map
April 2014
Figure 3
© 2012 Google Maps




# Groundwater Elevation and Flow Direction - April 2013 Bloomfield Refinery

April 2014 | Figure 4




## Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Piezometer

- Site
- Approximate Property Line
- Groundwater Elevation Contours
- Inferred Groundwater Elevation
- Groundwater Flow Direction - Dashed where inferred
- MW-47 5493.80 -Well ID
- -Groundwater Elevation (ft amsl)

**Notes:**

*** Deeper Well; data not used to contour.**

**1. Well not used to contour.**

August 2013

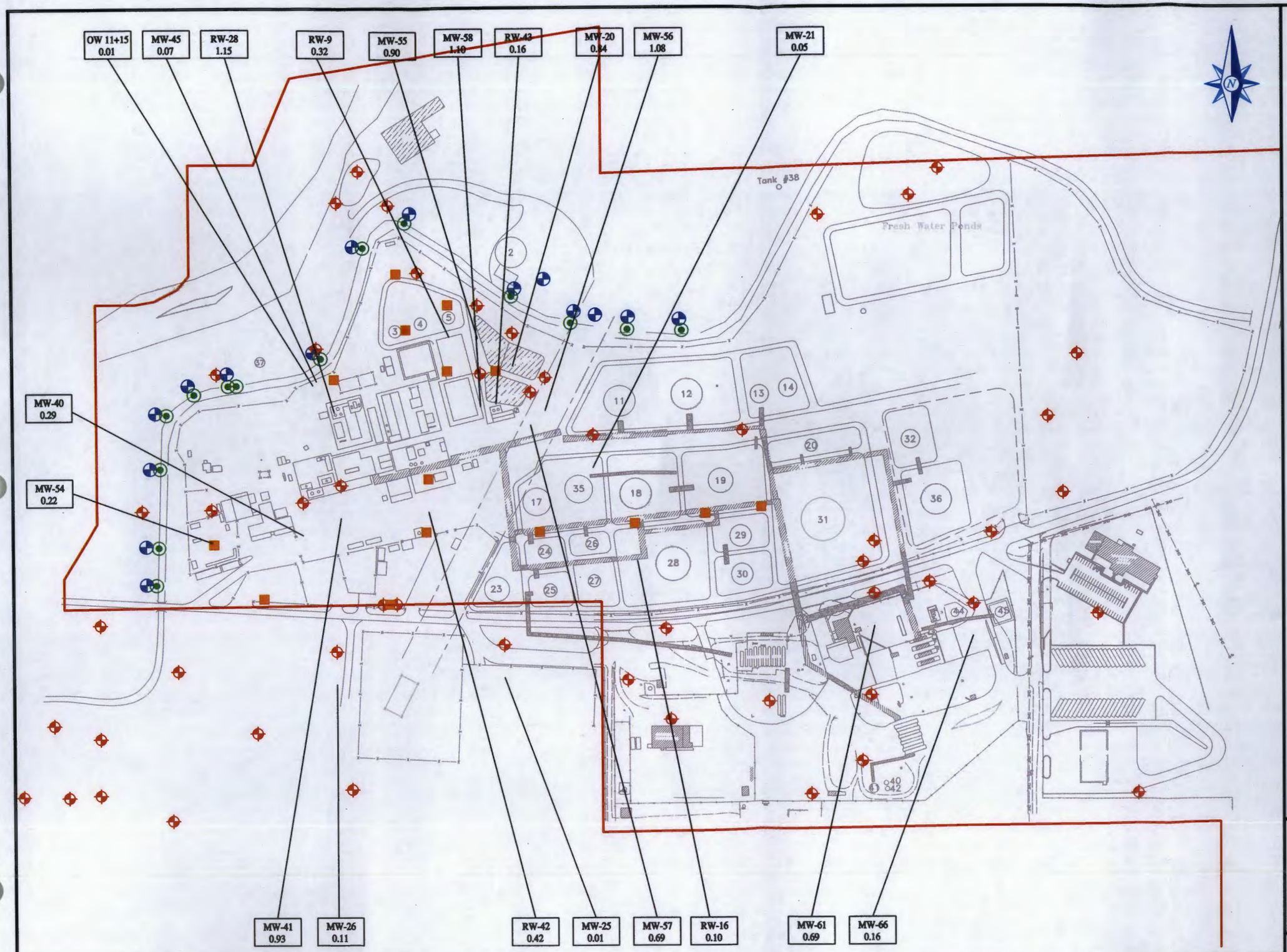
0 125 250 375 500

Feet

Western Refining

# Groundwater Elevation and Flow Direction - August 2013 Bloomfield Refinery

April 2014 | Figure 5




## Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Site
- Approximate Property Line
- MW-21 / 0.05 -Well ID -Product Thickness (feet)

# April 2013

0 125 250 375 500
Feet

Western Refining

**Product Thickness Map**
**April 2013**
**Bloomfield Terminal**

April 2014 | Figure 6

OW 11+15 0.01
MW-45 0.01
RW-28 1.12
RW-23 0.01
RW-18 0.01
RW-09 0.34
MW-55 0.84
MW-58 1.07
RW-43 0.16
MW-20 0.72
MW-56 0.76
MW-21 0.03
RW-16 0.32

OW 3+85 0.01
MW-54 0.19
RW-1 0.01
OW 1+50 0.01

MW-40 0.39
MW-41 0.92
MW-26 0.28
RW-42 0.15
MW-25 0.02
MW-57 0.70
MW-61 0.90
MW-66 0.27

Tank #38
Fresh Water Ponds

## Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Site
- Approximate Property Line
- RW-16 / 0.32 -Well ID -Product Thickness (feet)

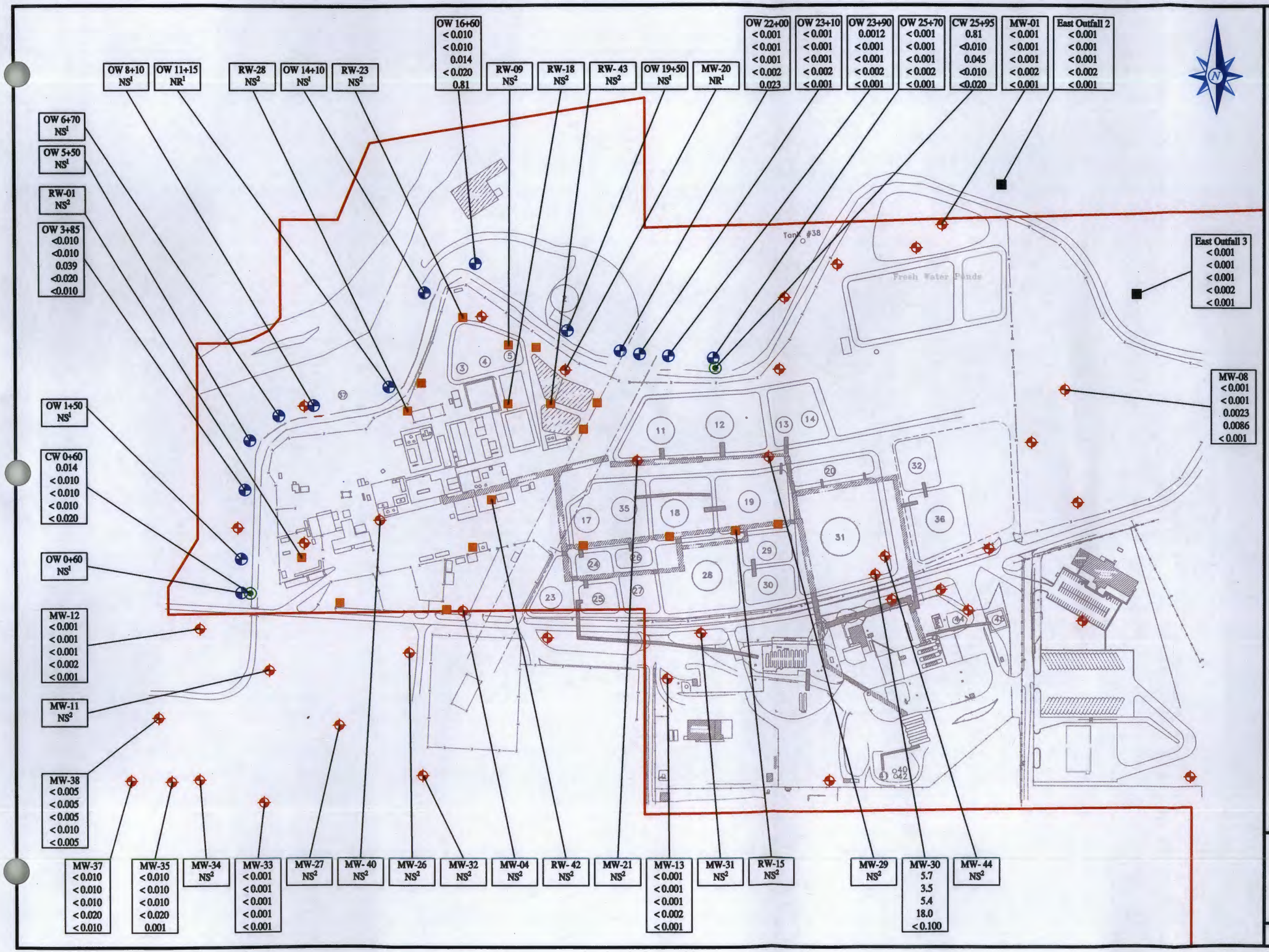
# August 2013

0 125 250 375 500
Feet

Western Refining

**Product Thickness Map**
**August 2013**
**Bloomfield Refinery**

April 2014 | Figure 7




## Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Outfall
- Site
- Approximate Property Line

| | |
|---|---|
| MW-08 | -Well ID |
| < 0.001 | -Benzene |
| < 0.001 | -Toluene |
| 0.0023 | -Ethylbenzene |
| 0.0086 | -Xylenes, Total |
| < 0.001 | -MTBE |

**Notes:**

**All concentrations in milligrams per liter (mg/L)**

NS[1] = Well is Dry or Not Enough Water to Sample- No sample

NS[2] = Not sampled due to approved Facility-wide Monitoring Plan.

NR[1] = No Sample Required - Well Contains Separate Phase Hydrocarbon

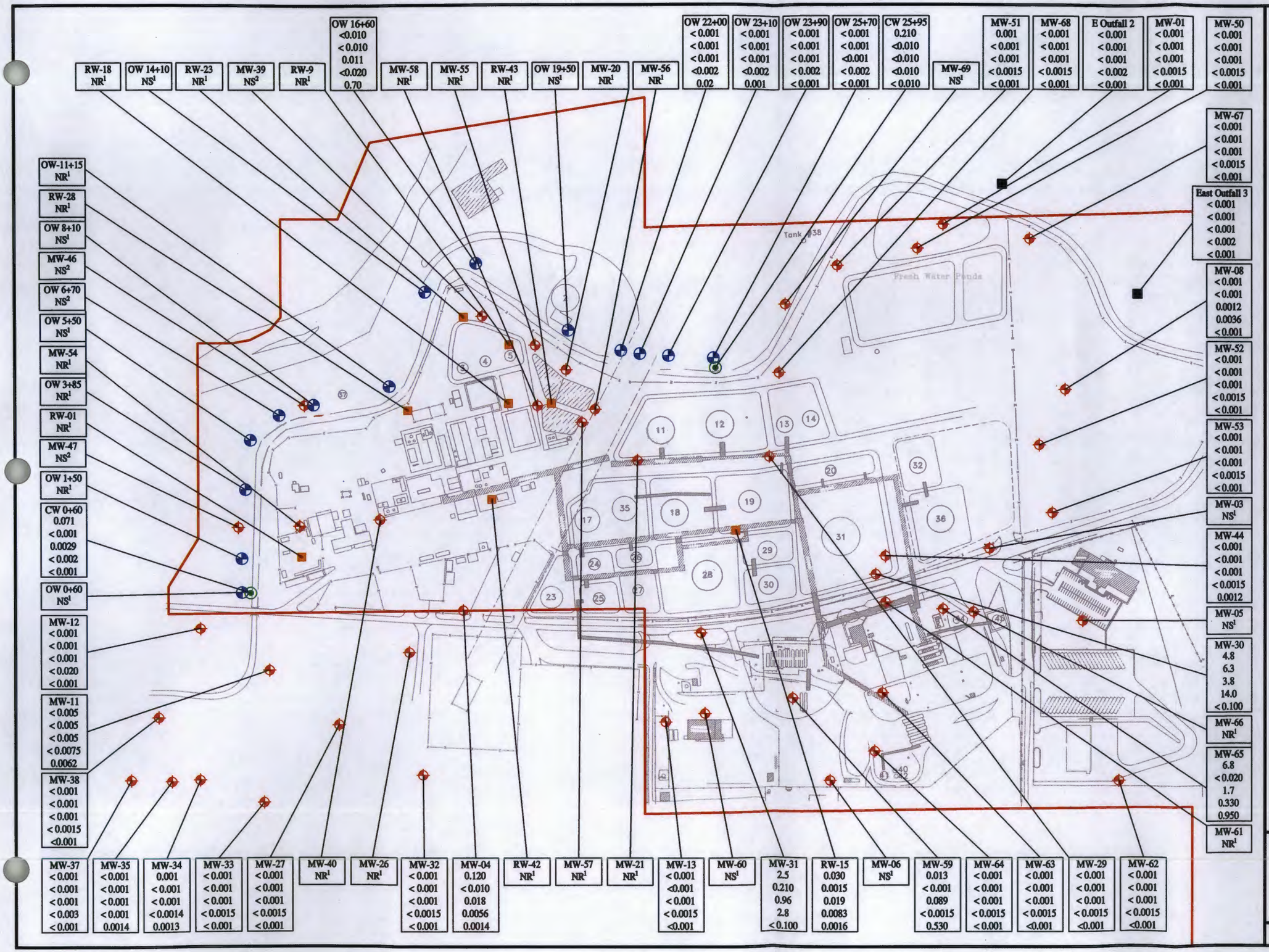
0 125 250 375 500

Feet

Western Refining

# BTEX and MTBE Concentration Map - April 2013 Bloomfield Refinery

April 2014 | Figure 8




## Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Outfall
- Site
- Approximate Property Line

| | |
|---|---|
| MW-38 | -Well ID |
| < 0.005 | -Benzene |
| < 0.005 | -Toluene |
| < 0.005 | -Ethylbenzene |
| < 0.0075 | -Xylenes, Total |
| 0.0016 | -MTBE |

**Notes:**

**All concentrations in milligrams per liter (mg/L)**

NS[1] = Well is Dry or Not Enough Water to Sample- No sample

NS[2] = Not sampled due to approved Facility-wide Monitoring Plan

NR[1] = No Sample Required - Well Contains Separate Phase Hydrocarbon

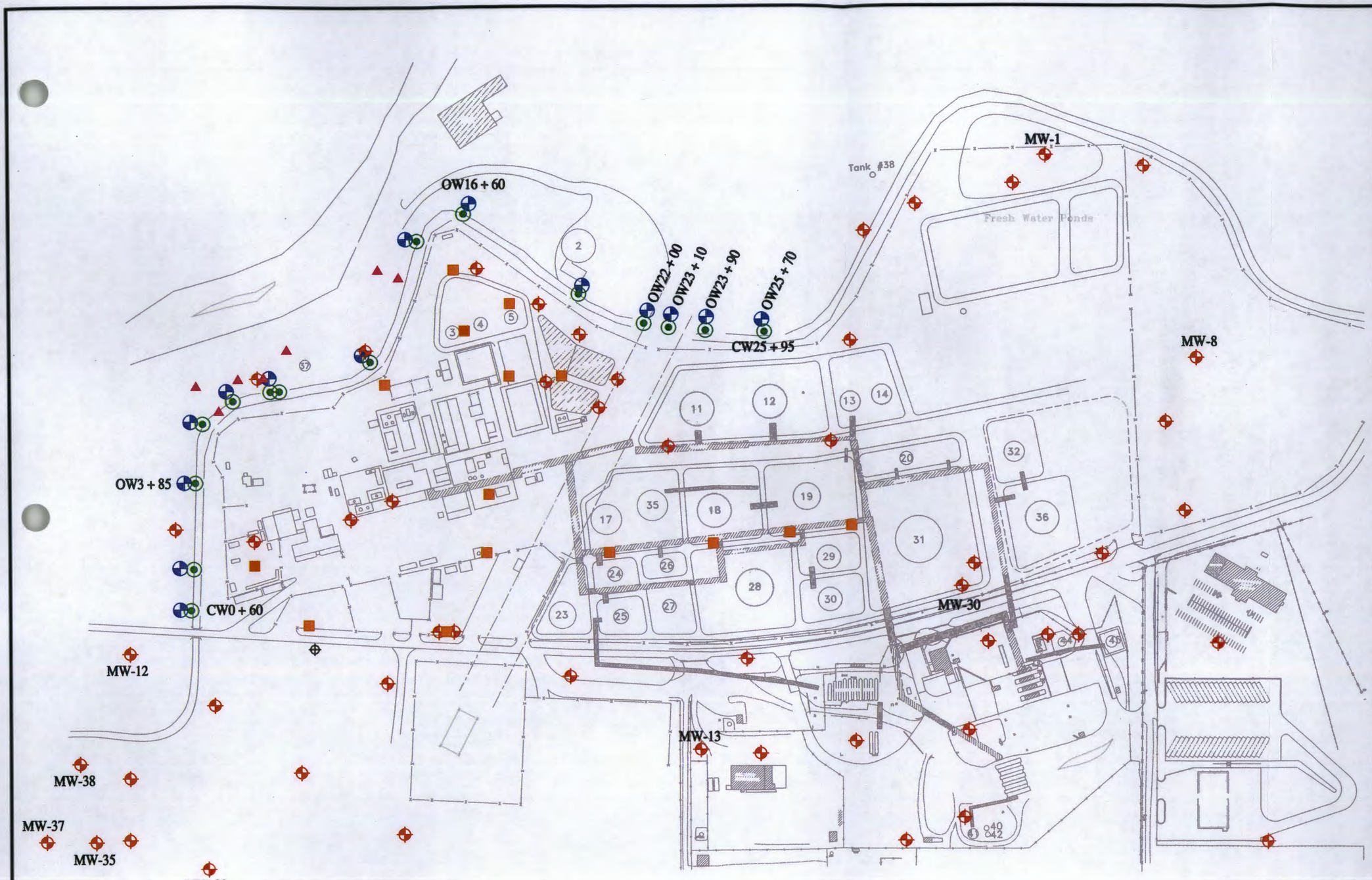
0 125 250 375 500

Feet

Western Refining

# BTEX and MTBE Concentration Map - August 2013 Bloomfield Refinery

April 2014 | Figure 9




## Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Piezometer
- Sump Well

Note:
All identified wells were sampled in April 2012

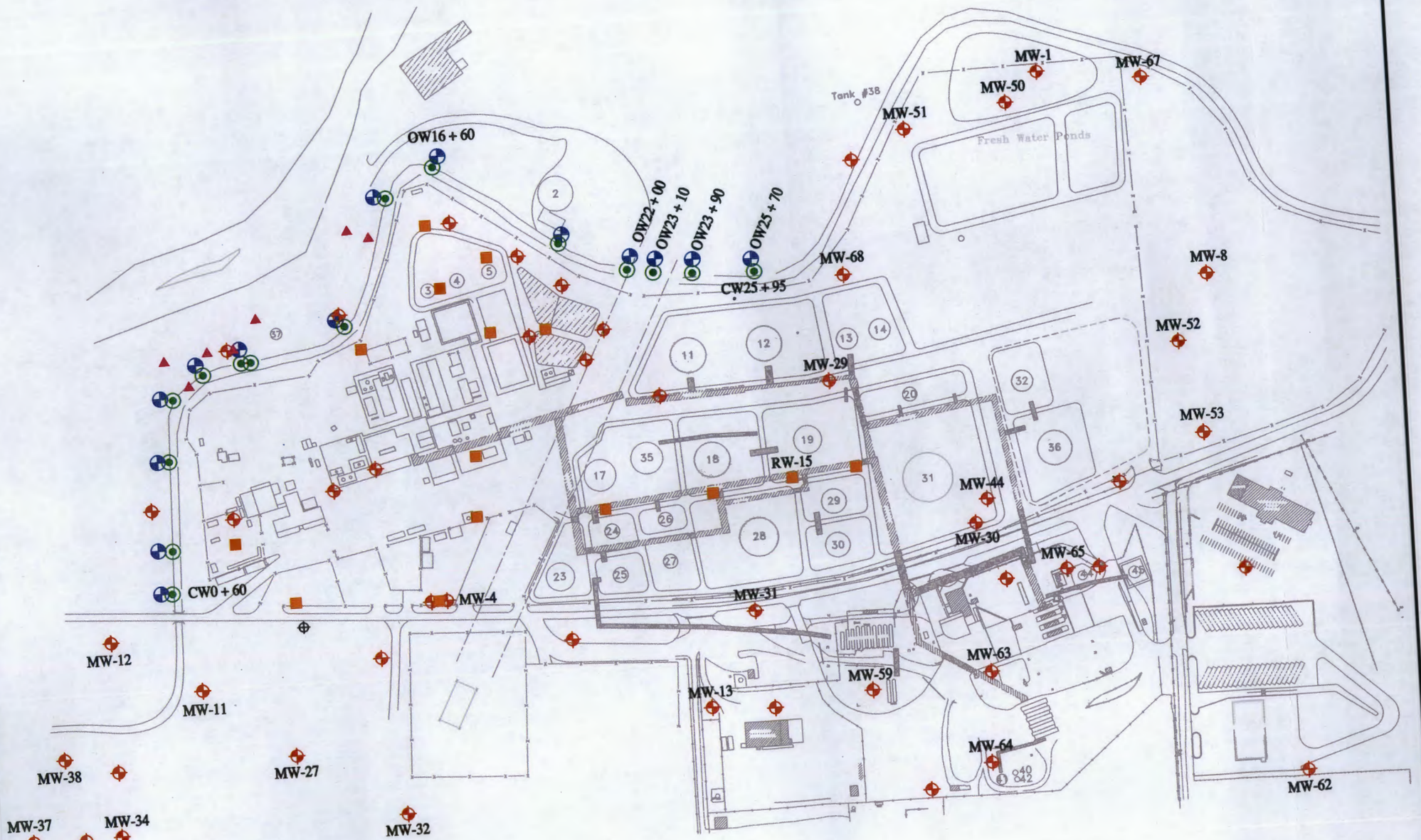
April 2013

0 125 250 375 500
Feet

Western Refining

**Wells Sampled**
**April 2013**
**Bloomfield Refinery**

| April 2014 | Figure 10 |
|---|---|




## Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Piezometer
- Sump Well

Note:
All identified wells were sampled in August 2012

August 2013

0 125 250 375 500
Feet

Western Refining

Wells Sampled
August 2013
Bloomfield Refinery

April 2014 | Figure 11

# Field Methods

# Appendix A

## Groundwater Elevation

All facility monitoring wells, recovery wells, observation and collection wells were measured for groundwater elevation in April, and August. Terminal personnel followed the guidelines of the *Facility-Wide Groundwater Monitoring Plan June 2011* to collect groundwater levels and SPH thickness measurements in April. In August terminal personnel followed the revisions received in June 2012.

All water/product levels are determined to an accuracy of 0.01 foot using a Geotech Interface Meter. The technician records separate phase hydrocarbon, depth to water, and total well depth using this probe.

## Water Quality/Groundwater Sampling

A YSI ProComm II is used to determine dissolved Oxygen (DO), electrical conductance, oxidation-reduction potential (ORP), Total Dissolved Solids (TDS), pH, and temperature are monitored during purging.

## Well Purging Technique

After determining water levels initial well volumes are calculated. Total purge volume is determined by monitoring electrical conductance, pH, temperature, after every two gallons or each well volume, whichever is less, has been purged from the well. The wells were considered satisfactorily purged when the field parameter values did not vary by more than 10 percent for at least three measurements.
Well volumes are determined using the following equation:
Well Depth – Casing Height – Depth to Liquid X Conversion Factor X Three.
The conversion factor is determined by the diameter of the well casing.

| Casing | Conversion Factor |
|---|---|
| 6" | 1.50 gal/ft |
| 5" | 1.02 gal/ft |
| 4" | 0.74 gal/ft |
| 3" | 0.367 gal/ft |
| 2" | 0.163 gal/ft |

Disposable bailers are used for purging and sampling. Each bailer holds one liter of liquid. Three well volumes can be calculated by counting the number of times a well is bailed.

## Well Sampling and Sample Handling Procedure

Equipment and supplies needed for collecting representative groundwater samples include:

- Interface Meter
- YSI ProComm II

- Distilled Water
- Disposable Latex Gloves
- Disposable Bailers
- String/Twine
- Cooler with Ice
- Bottle kits with Preservatives (provided by the contract laboratory)
- Disposable 0.45 micron Field Filters and Syringes
- Glass Jar (usually 4 oz.)
- Sharpie Permanent Marker
- Field Paperwork/Logsheet
- Two 5-gallon buckets
- Trash container (plastic garbage bag)
- Ziploc Bags
- Paper towels

After sufficient purging, samples are collected with the bailer and poured into the appropriate sample containers. Two people are usually utilized for sampling. Sampling takes place over a bucket to insure that spills are contained

For dissolved metals, sample water is poured into a jar and then extracted with a syringe. The syringe is then used to push water through a field filter into the proper sample bottle to collect the dissolved metals sample. Volatile organic analysis samples are collected as to allow no head space in the container.

Samples are labeled immediately with location, date, time, analysis, preservative, and sampler. Then they are put in a Ziploc bag and placed in a cooler holding sufficient ice to keep them cool. The field logsheet is reviewed to verify all entries.

**Purge and Decontamination Water Disposal**

YSI ProComm II and the interface probe are rinsed with distilled water after every well. The rinse procedure takes place over a bucket to insure that spills are contained.
All rinse and purge water is contained and then disposed of through the terminal wastewater system.

Any glassware used is washed with Alconox and water and rinsed with distilled water. Wastewater runs through the terminal wastewater system.

**Instrument Calibration**

The YSI ProComm II is use to measure Dissolved Oxygen (DO), electrical conductance, oxidation-reduction potential (ORP), Total Dissolved Solids (TDS), pH and is calibrated before each sampling event per the manufacture instruction manual.

**Remediation System Measurement**

Recovery well flows are measured using a 1000 ml graduated cylinder. The sample port on the discharge line of the pump is opened and effluent flows into the graduated cylinder. During a pump cycle, a measurement is taken over time and then calculated to a gallon per day rate.

Recovery rates at Tk #37 (Hammond Ditch French Drain) and Tk #38 (#1 East Outfall) are determined through flow meters installed in those systems. Refinery personnel record the rates periodically.

# Appendix B

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
Down Gradient 8-12-13

Project #:

Project Manager:

Sampler: MT + Bob
On Ice: ☒ Yes ☐ No
Sample Temperature: 6

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308631 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals TOTAL | Anions (F,Cl,NO3,NO2,PO4,SO4) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | 8015B DRO Extended | Dissolved Metals | Cation/Anion Balance | Alk/CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-12-13 | 8:30 | H2O | MW-11 | 5-VOA | HCl | -001 | | | X | | | | | | | X | | | | | |
| | | | | 1-Liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | HNO3 | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | HNO3 | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | H2SO4 | | | | | | | | | | | | | | | | X |

| Date | Time | Relinquished by | Received by | Date | Time |
|---|---|---|---|---|---|
| 8-12-13 | 1315 | Robert Kraker | Christine Walker | 8/12/13 | 1315 |
| 8/12/13 | 1727 | Christine Waller | | 08/13/13 | 1010 |

Remarks:
See full analyte list

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

# Chain-of-Custody Record

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Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
Down Gradient 8-12-13

Project #:

Project Manager:

Sampler: Matt a Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308531 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals TSTALS | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | 8015B DRO Extended | Dissolved Metals | Cation/Anion Balance | Alk / $CO_2$ | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-12-13 | 8:30 | $H_2O$ | MW-11D | 5-VOA | HCl | -002 | | | X | | | | | | | X | | | | | | |
| | | | | 1-liter | amber | | | | | | | | | | | | X | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-12-13 | 815 | Robert Krakow | Christine Walters | 8/12/13 | 1315 |
| 8/12/13 | 1727 | Christine Walters | | 08/13/13 | 1010 |

Remarks: See full analyte list

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

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☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
Down Gradient 8-12-13

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 1

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308411 |
|---|---|---|---|---|---|---|
| 8-12-13 | 11:00 | $H_2O$ | MW-12 | 5-VOA | HCl | -003 |
| | | | | 1-liter | amber | |
| | | | | 1-500ml | amber | |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-500ml | | |
| | | | | 1-250ml | $H_2SO_4$ | |

Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals TOTALS | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | 8015B DRO Extended | Dissolved Metals | Cations/Anion Balance | Alk/TDS | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | X | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | | | | | | X | | | |
| | | | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-12-13 | 1315 | Robert Krakow | Christine Walters | 8/12/13 | 1315 |
| 8/12/13 | 1727 | Christine Walters | | 08/13/13 | 1010 |

Remarks: Equip. BLANK-008
Field BLANK-009
See full analyte list

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
Down Gradient 8-12-13

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: [redacted]


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | [redacted] | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/[redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals TCLP | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | 8015B DRO Extended | Dissolved Metals | Cation/Anion Balance | Alk/CO2 | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-12-13 | 10:00 | $H_2O$ | MW-34 | 5-VOA | HCl | -004 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X | |
| 8-12-13 | 9:00 | | MW-35 | 5-VOA | HCl | -005 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-12-13 | 1315 | Robert Bracken | Christin Waeke | 8/12/13 | 1315 |
| 8/12/13 | 1727 | Christin Waeke | [signature] | 08/13/13 | 1010 |

Remarks:
See full analyte list

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
Down Gradient 8-12-13

Project #:

Project Manager:

Sampler: Matt + Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4

HEAL No. 1308541

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. |
|---|---|---|---|---|---|---|
| 8-12-13 | 9:30 | $H_2O$ | MW-34 | 5-VOA | HCl | -006 |
| | | | | 1-500ml | amber | |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-500ml | | |
| | | | | 1-250ml | $H_2SO_4$ | |

| Date | Time | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-12-13 | 1315 | Robert Knudsen | Christie Wade | 8/12/13 | 1315 |
| 8/12/13 | 1727 | Christie Wade | | 08/13/13 | 1010 |


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www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/[redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals TOTAL | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | 8015B DRO Extended | Dissolved Metals | Cation/Anion Balance | Alk/$CO_3$ | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | | | | | | X | | | |
| | | | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | | X | |

Remarks:
See full analyte list

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
Down Gradient 8-12-13

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature:


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


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. |
|---|---|---|---|---|---|---|
| 8-12-13 | 10:30 | $H_2O$ | MW-38 | 5-VOA | HCl | -007 |
| | | | | 1-liter | amber | |
| | | | | 1-500ml | amber | |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-500ml | | |
| | | | | 1-250ml | $H_2SO_4$ | |

Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/[redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals Total | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | 8015B DRO Extended | Dissolved Metals | Cation/Anion Balance | Alk/Cl | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | X | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | | | | | | X | | | |
| | | | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-12-13 | 1315 | Robert Krakow | Christine Walker | 8/12/13 | 1315 |
| 8/12/13 | 1727 | Christine Walker | | 08/13/13 | 1010 |

Remarks:
See full analyte list

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Refinery Wells 4-10-13

Project #:

Project Manager:

Sampler: Matt + Bob

On Ice: Yes

Sample Temperature: 3


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www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1306106 | Analysis Request: BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-10-13 | 1:10 | $H_2O$ | MW-8 | 3-VOA | HCl | -001 | | | | | | | | | | X | | |
| 4-10-13 | 1:30 | $H_2O$ | MW-30 | 3-VOA | HCl | -002 | | | | | | | | | | X | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 4-10-13 | 3:00 | Robert Kraken | | 04/11/13 | 1000 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |

Remarks:

If nec[illegible], samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. [illegible]erves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytic[illegible]t.

# Cha[illegible]-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Refinery Wells 8-8-13

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: [illegible]

Sample Temperature: 2.8

HEAL [illegible]

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www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/[illegible]) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals Total | Anions (F,Cl,NO3,NO2,PO4,SO4) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO-8015B | Dissolved Metals | Cation/Anion Balance | alkalinity, CO2 | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-8-13 | 9:15 | H2O | MW-4 | 5-VOA | HCL | -001 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500 mL | amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500mL | HNO3 | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | HNO3 | | | | | | | | | | | | | | X | | | |
| | | | | 1-500 ml | | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | H2SO4 | | | | | | | | | | | | | | | | X | |
| 8-8-13 | 7:30 | H2O | MW-8 | 5-VOA | HCL | -002 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | HNO3 | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | HNO3 | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | H2SO4 | | | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-8-13 | 1650 | Robert Bracken | Christy Waeta | 8/8/13 | 1650 |
| 8/8/13 | 1750 | Christy Waeta | | | |
| | | | Received by: | Date | Time |
| | | | | 08/09/13 | 0945 |

Remarks: equipment rinsate, field Blank -009
See full analyte list -010
Trip Blank -011

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Refinery Wells 8-8-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.5

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308[illegible]73 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/[illegible]el) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals Total | Anions (F,Cl,$NO_3$,$NO_2$,$PO_4$,$SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation / Anion Balance | Alkalinity, $CO_2$ | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-8-13 | 8:45 | $H_2O$ | ~~RW-29~~ | 5-VOA | HCL | -003 | | | X | | | | | | | X | | | | | | |
| | | | MW-29 | 1-500ml | Amber | | | | | | | | | | | | | X | | | | |
| | | | PER BOB 08/12/13 | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X | |
| 8-8-13 | 9:40 | | RW-15 | 5-VOA | HCL | -004 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-8-13 | 1650 | Robert Knabow | Christine Walsh | 8/8/13 | 1650 |
| 8/8/13 | 1750 | Christine Walsh | | 08/09/13 | 0945 |

Remarks: see full analyte list

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR4990
Bloomfield NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Refinery Wells 8-8-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature:


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308390 |
|---|---|---|---|---|---|---|
| 8-8-13 | 7:55 | H2O | MW-30 | 5-VOA | HCL | -005 |
| | | | | 1-500ml | Amber | |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-500ml | | |
| | | | | 1-250 ml | $H_2SO_4$ | |
| 8-8-13 | 10:30 | | MW-31 | 5-VOA | HCL | -006 |
| | | | | 1-500ml | Amber | |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-500ml | | |
| | | | | 1-250 | $H_2SO_4$ | |

Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals Total | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity, $CO_2$ | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | | | | | | X | | | |
| | | | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | | X | |
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | | | | | | X | | | |
| | | | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | | X | |

Remarks:
See full analyte list
Trip Blank

| Date | Time | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-8-13 | 1650 | | | 8/8/13 | 1650 |
| 8/8/13 | 1756 | | | 08/09/13 | 0945 |

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Refinery Wells 8-8-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: 7.8


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1306 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity, $CO_2$ | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-8-13 | 8:15 | $H_2O$ | MW-44D | 5-VOA | HCL | -007 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X | |
| 8-8-13 | 8:15 | | MW-44 | 5-VOA | HCL | -008 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-8-13 | 1650 | Robert Krakow | Christa Waeba | 8/8/13 | 1650 |
| 8/8/13 | 1750 | Christa Waeba | | 08/09/13 | 0945 |

Remarks:

See analyte list

[redacted]

If nec samples submitted to Hall Environmental may be subcontracted to other accredited laboratories serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytic rt.

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
North Boundry Barrier

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4

HEAL No. 1308335

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | |
|---|---|---|---|---|---|---|
| 8-7-13 | 8:15 | $H_2O$ | CW-0+60 | 5-VOA | HCl | -001 |
| | | | | 1-500ml | amber | |
| 8-7-13 | 10:30 | | CW-25+95 | 5-VOA | HCl | -002 |
| | | | | 1-500ml | amber | |
| 8-7-13 | 8:15 | | CW-0+60D | 5-VOA | HCl | -003 |
| | | | | 1-500ml | amber | |
| 8-7-13 | 10:45 | | Field BLANK | 3-VOA | HCl | -004 |
| 8-7-13 | 10:50 | | Equip. BLANK | 3-VOA | HCl | -005 |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-7-13 | 1226 | Robert Krakow | Christine Walker | 8/7/13 | 1226 |
| 8/7/13 | 1737 | Christine Walker | | | |

Received by: 08/08/13 0905

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


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | 8015B Dro Extended | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | | | | X | | | | | | |
| | | | | | | | | | X | | | | | | |

Remarks: See attachment for full analytical list

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
North Boundry Barrier

Project #:

Project Manager:

Sampler: MATT + Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HEAL No. 1308354

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. |
|---|---|---|---|---|---|---|
| 8-7-13 | 8:30 | $H_2O$ | OW 16+60 | 5-VOA | HCl | -001 |
| | | | | 1-500ml | amber | |
| | 9:00 | | OW 22+00 | 5-VOA | HCl | -002 |
| | | | | 1-500ml | amber | |
| | 9:20 | | OW-23+10 | 5-VOA | HCl | -003 |
| | | | | 1-500ml | amber | |
| | 9:50 | | OW-23+90 | 5-VOA | HCl | -004 |
| | | | | 1-500ml | amber | |
| | 10:15 | | OW-25+70 | 5-VOA | HCl | -005 |
| | | | | 1-500ml | amber | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-7-13 | 1220 | Cody Knabow | Christa Walls | 8/7/13 | 1226 |
| 8/7/13 | 1737 | Christa Walls | | 08/08/13 | 0955 |

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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/[redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | 8015B DRO extended | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |

Remarks: See attatchment for full analytical List

# Chain-of-Custody Record

Client: Western Refinery

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: 4-10-13
Cross Gradient Wells

Project #:

Project Manager:

Sampler: Matt & Bob
On Ice: ☒ Yes ☐ No
Sample Temperature: 3.1

HEAL No. 1304408

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | |
|---|---|---|---|---|---|---|
| 4-10-13 | 1:00 | H2O | MW-1 | 5-VOA | HCl | -001 |
| | | | | 1-500ml | amber | |
| 4-10-13 | 2:30 | | MW-13 | 3-VOA | HCl | -002 |
| 4-10-13 | 2:00 | | MW-33 | 5-VOA | HCl | -003 |
| | | | | 1-500ml | amber | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 4-10-13 | 3:00 | Robert Knaker | | 04/11/13 | 1000 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |


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www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Extended DRO - 8015B | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | X | | | | | | | X | | | | | | |
| | | X | | | | | | | | | X | | | | |
| | | X | | | | | | | X | | | | | | |
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |

Remarks:
No GRO for MW-13 /AT 04/11/13

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:
~~Standard~~ X Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
X Standard ☐ Rush

Project Name:
Cross Gradient

Project #:

Project Manager:

Sampler: MAT & Bob

On Ice: Yes

Sample Temperature:

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www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/[redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals Total | Anions (F,Cl,$NO_3$,$NO_2$,$PO_4$,$SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | 8015B DRO Extended | Dissolved Metals | Cation/Anion Balance | Alk/$CO_2$ | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-13-13 | 7:45 | $H_2O$ | MW-1 | 5-VOA | HCl | -001 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X | |
| 8-13-13 | 8:15 | | MW-13 | 5-VOA | HCl | -002 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-13-13 | 1053 | Robert Hanson | Christine Walker | 8/13/13 | 1053 |
| 8/14/13 | 1740 | Christine Walker | | 08/14/13 | 1000 |

Remarks: Interface probe rinsate - 010
See full analyte list
Field Blank, equipment blank, trip bk
-009 -008

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
Cross Gradient 8-13-13

Project #:

Project Manager:

Sampler: Matt + Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4

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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/[redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals TOTAL | Anions (F,Cl,$NO_3$,$NO_2$,$PO_4$,$SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | 8015B DRO Extended | Dissolved Metals | Cation/Anion Balance | Alk/$CO_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-13-13 | 9:40 | $H_2O$ | MW-27D | 5-VOA | HCl | -003 | | | X | | | | | | | X | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | -0 | | | | | | | | | | | | | | | X |
| 8-13-13 | 9:40 | | MW-27 | 5-VOA | HCl | -004 | | | X | | | | | | | X | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-13-13 | 1053 | Debra Knakow | Christine Walters | 8/13/13 | 1053 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |
| 8/14/13 | 1740 | Christine Walters | | 08/14/13 | 1000 |

Remarks:
See full analyte list

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
Cross Gradient 8-13-13

Project #:

Project Manager:

Sampler: Matt + Bob

Sample Temperature:

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | |
|---|---|---|---|---|---|---|
| 8-13-13 | 8:45 | $H_2O$ | MW-32 | 5-VOA | HCl | -005 |
| | | | | 1-500ml | amber | |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-500ml | — | |
| | | | | 1-250ml | $H_2SO_4$ | |
| 8-13-13 | 9:10 | | MW-33 | 5-VOA | HCl | -006 |
| | | | | 1-500ml | amber | |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-500ml | — | |
| | | | | 1-250ml | $H_2SO_4$ | |

| Date | Time | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-13-13 | 10:53 | Robert Bradow | [illegible] | 8/13/13 | 1053 |
| 8/13 | 1740 | [illegible] | [illegible] | 08/14/13 | 1000 |

Remarks: Trip Blank
See full analyte list

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/[illegible]) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals TOTAL | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | 8015B DRO Extended | Dissolved Metals | Cation/anion Balance | Alk/Cor | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | | | | | | X | | | |
| | | | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | | X | |
| | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | | | | | | X | | | |
| | | | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | | X | |

# Chain-of-Custody Record

Client: Western Refinery

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: 4-11-13
Down Gradient Wells

Project #:

Project Manager:

Sampler: MATT & Bob
On Ice: ☒ Yes ☐ No
Sample Temperature: 2


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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1304527 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Extended DRO 8015 B | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-11-13 | 8:30 | $H_2O$ | MW-12 | 5-VOA | HCl | -001 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | 8:45 | | MW-35 | 3-VOA | HCl | -002 | | | | | | | | | | X | | | | | | |
| | 9:00 | | MW-37 | 5-VOA | HCl | -003 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | 9:15 | | MW-38 | 5-VOA | HCl | -004 | | | | | | | | | | | | | | | | |
| | | | | 1-500ml | amber | | | | X | | | | | | | X | | | | | | |
| | | | | | | | | | | | | | | | | | | X | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 4-11-13 | 3:00 | Robert Krakow | | 04/12/13 | 0930 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |

Remarks:

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: RCRA Wells 8-14-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.6


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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions (F,Cl,$NO_3$,$NO_2$,$PO_4$,$SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity, $CO_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-14-13 | 9:30 | $H_2O$ | MW-51 | 5-VOA | HCL | -001 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-14-13 | 1715 | Robert Bracken | Chris Walls | 8/14/13 | 1215 |
| 8/14/13 | 1743 | Chris Walls | | 08/15/13 | 1010 |

Remarks:
See full analyte list
-007 -008 -009
Trip Blank, Equip. Blank, Field Blank

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name:
RCRA Wells 8-14-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: 4°C


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL 1308[illegible]19 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [illegible]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-14-13 | 8:00 | $H_2O$ | MW-52 | 5-VOA | HCL | -002 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-14-13 | 1215 | Robert Bracken | Christine Walters | 8/14/13 | 1215 |
| 8/14/13 | 1743 | Christine Walters | | 08/15/13 | 1010 |

Remarks:
See full analyte list

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
RCRA Wells 8-14-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: [redacted]


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1305[redacted] | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions (F,Cl,$NO_3$,$NO_2$,$PO_4$,$SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO-8015B | Dissolved Metals | Cation/Anion | Alkalinity, $CO_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-14-13 | 7:30 | $H_2O$ | MW-53 | 5-VOA | HCL | -003 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-14-13 | 1215 | Robert Hrakow | Christin Wade | 8/14/13 | 1215 |
| 8/14/13 | 1743 | Christin Wade | | 08/15/13 | 1010 |

Remarks:
See full analyte list

If ne[illegible]y, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories[illegible] serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analyt[illegible]ort.

# ain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: RCRA Wells 8-14-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308094 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation/Anion Balance | TDS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-14-13 | 8:30 | H2O | MW-67 | 5-VOA | HCL | -004 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-14-13 | 1215 | Robert Knelson | Cristen Waeble | 8/14/13 | 1215 |
| 8/14/13 | 1743 | Cristen Waeble | | 08/15/13 | 1010 |

Remarks: See full analyte list

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
RCRA Wells 8-14-13

Project #:

Project Manager:

Sampler: Bob & Matt
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308097 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity, $CO_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-14-13 | 9:00 | $H_2O$ | MW-50 | 5-VOA | HCL | -005 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-14-13 | 1215 | [signature] | [signature] | 8/14/13 | 1215 |
| 8/14/13 | 1743 | [signature] | [signature] | 08/15/13 | 1010 |

Remarks:
See full analyte list

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: RCRA Wells 8-14-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.6°C

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

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308149 |
|---|---|---|---|---|---|---|
| 8-14-13 | 10:00 | $H_2O$ | MW-68 | 5-VOA | HCL | -006 |
| | | | | 1-liter | Amber | |
| | | | | 1-500ml | Amber | |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-500ml | — | |
| | | | | 1-250ml | $H_2SO_4$ | |

Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity, $CO_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | X | | | | | | | X | | | | | |
| | | | | | | | | | | X | | | | |
| | | | | | | | | | | | X | | | |
| | | | | | | X | | | | | | | | |
| | | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | X | |
| | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-14-13 | 1215 | Robert Knakow | Christine Walls | 8/14/13 | 1215 |
| 8/14/13 | 1743 | Christine Walls | | 08/15/13 | 1010 |

Remarks: See full analyte list

Trip BLANK

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: RCRA Wells 8-15-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature:


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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308[illegible] | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [redacted] / [redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity, $CO_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-15-13 | 11:15 | $H_2O$ | MW-59 | 5 VOA | HCL | -001 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X |

| Date | Time | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-15-13 | 1445 | Robert Kraken | Christa Walls | 8/15/13 | 1445 |
| 8/15/13 | 1721 | Christa Walls | | 08/16/13 | 1007 |

Remarks:
See full analyte list
Trip Blank

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
RCRA Wells 8-15-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature:


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308[illegible] | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity, $CO_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-15-13 | 9:45 | $H_2O$ | MW-62 | 5-VOA | HCL | -002 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-15-13 | 1445 | Robert Krakow | Christine Walker | 8/15/13 | 1445 |
| 8/15/13 | 1721 | Christine Walker | | 08/16/13 | 1007 |

Remarks: See analyte list

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
RCRA Wells 8-15-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308 [illegible] | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [illegible]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions (F,Cl,$NO_3$,$NO_2$,$PO_4$,$SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity, $CO_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-15-13 | 10:15 | $H_2O$ | MW-63 | 5-VOA | HCL | -003 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-15-13 | 1445 | Robert Knudson | Christin Waeter | 8/15/13 | 1445 |
| 8/15/13 | 1721 | Christin Waeter | | 08/16/13 | 1007 |

Remarks:
See full analyte list

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
RCRA Wells 8-15-13

Project #:

Project Manager:

Sampler: Bob & Matt
On Ice: ☐ ☒ Yes ☐ No
Sample Temperature: [illegible]


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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308780 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity, $CO_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-15-13 | 10:45 | $H_2O$ | MW-64 | 5-VOA | HCL | -004 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-15-13 | 1445 | Robert Kraken | Christine Walters | 8/15/13 | 1445 |
| 8/15/13 | 1721 | Christine Walters | | 08/16/13 | 1007 |

Remarks:
See full analyte list

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
RCRA Wells 8-15-13

Project #:

Project Manager:

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature:

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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308736 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals Total | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | DRO - 8015B | Dissolved Metals | Cation/Anion Balance | Alkalinity as $CO_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-15-13 | 9:15 | $H_2O$ | MW-65 | 5-VOA | HCl | -005 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | Amber | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | Amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-15-13 | 1445 | Robert Krakow | Christine Walters | 8/15/13 | 1445 |
| 8/15/13 | 1721 | Christine Walters | | 08/16/13 | 1007 |

Remarks:
See full analyte list
-006 -007 -008
Trip Blank, Field Blank, Equip. Blank

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield Nm 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
BACKGROUND Wells 1-10-13

Project #:

Project Manager:

Sampler: MAIT & Bob

On Ice: ☐ No

Sample Temp: 2°C

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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | [redacted] | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals | Anions (F,Cl,$NO_3$,$NO_2$,$PO_4$,$SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | Dissolved Total Metals | Gen. Chemistry | Cyanide | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-10-13 | 10:00 | $H_2O$ | MW-BCK-1 | 1-500ml | $HNO_3$ | -001 | | | | | | | X | | | | | | | | | |
| | | | [redacted] | 1-250ml | $HNO_3$ | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | | X | | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | X | | | |
| | | 1/11/13 KR | | 1-500ml | NaOH | | | | | | | | | | | | | | | X | | |
| 1-10-13 | 2:00 | $H_2O$ | MW-BCK-2 | 1-500ml | $HNO_3$ | -002 | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | | X | | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | NaOH | | | | | | | | | | | | | | | X | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 1-10-13 | 3:00 | Robert Kraken | [signature] | 1/11/13 | 0945 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |

Remarks: See Attached List for Gen Chem + Dissolved Total Metals per KR 01/11/13

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #:

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: 4-11-13
San Juan River Bluff

Project #:

Project Manager:

Sampler: Matt & Bob
On Ice: ☐ No
Sample Temperature: 1.2

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1304154 |
|---|---|---|---|---|---|---|
| 4-11-13 | 10:10 | H2O | outfall #2 | 3-VOA | HCl | -001 |
| | | | | 1-500ml | $HNO_3$ | -001 |
| | | | filtered | 1-250ml | $HNO_3$ | -001 |
| | | | | 1-250ml | $H_2SO_4$ | -001 |
| | | | | 1-500ml | — | -001 |
| 4-11-13 | 9:45 | | outfall #3 | 3-VOA | HCl | -002 |
| | | | | 1-500ml | $HNO_3$ | -002 |
| | | | filtered | 1-250ml | $HNO_3$ | -002 |
| | | | | 1-250ml | $H_2SO_4$ | -002 |
| | | | | 1-500ml | — | -002 |
| | | | | | | -002 |
| | | | | | | -002 |

Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Alk., $CO_2$ | Dissolved Metals | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | X | | | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | | | | | | X | | | |
| | | | | | | | X | | | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | | | | X | | | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | ■ | | | | | X | | | |
| | | | | | | | X | | | | ■ | | | | |
| | | | | | | | | | ■ | | X | | | | |
| | | | | | | | | | ■ | | | | | | |
| | | | | | | | | | | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 4-11-13 | 3:00 | Robert Knabow | | 04/12/13 | 09:30 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |

Remarks:

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

# Chain-of-Custody Record

Client: Western Refinery

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: 4-11-13
San Juan River Bluff

Project #:

Project Manager:

Sampler: Matt & Bob
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.2


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


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1304160 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals | Anions (F,Cl,$NO_3$,$NO_2$,$PO_4$,$SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | AIK., $CO_2$ | Dissolved Metals | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-11-13 | 9:45 | H2O | Outfall #3D | 3-VOA | HCl | -003 | | | | | | | | | | X | | | | | | |
| | | | | 1-500ml | $HNO_3$ | -003 | | | | | | | X | | | | | | | | | |
| | | | filtered | 1-250ml | $HNO_3$ | -003 | | | | | | | | | | | | | X | | | |
| | | | | 1-250ml | $H_2SO_4$ | -003 | | | | | | | | X | | | | | | | | |
| | | | | 1-500ml | | -003 | | | | | | | | | | | | X | | | | |
| | | | Trip Blank | 3-VOA | HCl | -004 | | | | | | | | | | X | X | | | | | |
| | | | | | | | | | | | | | | | | | MW 4/15 | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date Time | Remarks: |
|---|---|---|---|---|---|
| 4-11-13 | 3:00 | Robert Krakow | | 04/12/13 0913 D | |
| Date: | Time: | Relinquished by: | Received by: | Date Time | |

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

# Chain-of-Custody Record

Client: Western Refinery

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: 4-10-13
North Boundary Barrier

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.1

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

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1304460 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions (F,Cl,NO3,NO2,PO4,SO4) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Extended DRO-8015B | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-10-13 | 11:00 | H2O | OW-23+90 | 5-VOA | HCl | -001 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| 4-10-13 | 11:15 | | OW-25+70 | 5-VOA | HCl | -002 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| 4-10-13 | 11:20 | | OW-25+70D | 5-VOA | HCl | -003 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 4-10-13 | 3:00 | Robert Knabon | | | |
| Date: | Time: | Relinquished by: | Received by: | 04/11/13 | 1100 |

Remarks:

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# Chain-of-Custody Record

Client: Western Refinery

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: 4-10-13 North Boundary Barrier Wells

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.1


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1304407 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Extended DRO - 30158 | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-10-13 | 9:30 | $H_2O$ | CW-0+60 | 5-VOA | HCl | -001 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| 4-10-13 | 11:20 | | CW-25+95 | 5-VOA | HCl | -002 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |

Date: 4-10-13 Time: 3:00 Relinquished by: Robert Bracken

Received by: Date Time 04/11/13 1600

Date: Time: Relinquished by:

Received by: Date Time

Remarks: no GRO per BK 04/11/13

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
North Boundary Barrier 4-10-13

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.1

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

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1304403 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Extended DRO-8015B | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-10-13 | 10:00 | H2O | OW-3+85 | 5-VOA | HCl | -001 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| 4-10-13 | 10:15 | | OW-16+60 | 5-VOA | HCl | -002 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| 4-10-13 | 10:30 | | OW-22+00 | 5-VOA | HCl | -003 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| 4-10-13 | 10:45 | | OW-23+10 | 5-VOA | HCl | -004 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | | | Trip Blank | 3-VOA | | -005 | | | X | | | | | | | X | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time | Remarks: |
|---|---|---|---|---|---|---|
| 4-10-13 | 3:00 | Robert Krakow | | 04/11/13 | 1000 | |
| Date: | Time: | Relinquished by: | Received by: | Date | Time | |

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: North Boundry Barrier

Project #:

Project Manager:

Sampler: Matt + Bob

On Ice: ☒ Y ☐ N

Sample Temperature: 1.2

HEAL No. 1308355

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. |
|---|---|---|---|---|---|---|
| 8-7-13 | 8:15 | $H_2O$ | CW-0+60 | 5-VOA | HCl | -001 |
| | | | | 1-500ml | amber | |
| 8-7-13 | 10:30 | | CW-25+95 | 5-VOA | HCl | -002 |
| | | | | 1-500ml | amber | |
| 8-7-13 | 8:15 | | CW-0+60D | 5-VOA | HCl | -003 |
| | | | | 1-500ml | amber | |
| 8-7-13 | 10:45 | | Field BLANK | 3-VOA | HCl | -004 |
| 8-7-13 | 10:50 | | Equip. BLANK | 3-VOA | HCl | -005 |

Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | 8015B DRO extended | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | X | | X | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | | | | X | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | | | | X | | | | | | |
| | | | | | | | | | X | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-7-13 | 1226 | Robert Krakow | Christa Weele | 8/7/13 | 1226 |
| 8/7/13 | 1737 | Christa Weele | | 08/08/13 | 0905 |

Remarks: See attachment for full analytical list


HALL ENVIRONMENTAL ANALYSIS LABORATORY
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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
North Boundry Barrier

Project #:

Project Manager:

Sampler: MATT + Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308354 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals | Anions (F,Cl,$NO_3$,$NO_2$,$PO_4$,$SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | 8015B DRO extended | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-7-13 | 8:30 | $H_2O$ | OW 16+60 | 5-VOA | HCl | -001 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | 9:00 | | OW 22+00 | 5-VOA | HCl | -002 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | 9:20 | | OW-23+10 | 5-VOA | HCl | -003 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | 9:50 | | OW-23+90 | 5-VOA | HCl | -004 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | 10:15 | | OW-25+70 | 5-VOA | HCl | -005 | | | X | | | | | | | X | | | | | | |
| | | | | 1-500ml | amber | | | | | | | | | | | | | X | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-7-13 | 1220 | Matt Knabow | Christa Walls | 8/7/13 | 1226 |
| 8/7/13 | 1737 | Christa Walls | | 08/08/13 | 0955 |

Remarks: See attatchment for full analytical List

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: San Juan River Bluff outfall ~~outfalls~~ 8-6-13

Project #:

Project Manager:

Sampler: Matt + Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.0

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. |
|---|---|---|---|---|---|---|
| 8-6-13 | 9:30 | $H_2O$ | #2 | 3-VOA | HCl | -001 |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-250ml | $H_2SO_4$ | |
| | | | | 1-500ml | — | |
| 8-6-13 | 9:45 | $H_2O$ | #3 | 3-VOA | HCl | -002 |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-250ml | $H_2SO_4$ | |
| | | | | 1-500ml | — | |

Analysis Request

| BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals TCLP | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Alkalinity, $CO_2$ | Gold B Dissolved Metals | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | X | | | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | | | | | | X | | | |
| | | | | | | | X | | | | | | | | |
| | | | | | | | | | | | X | | | | |
| | | | | | | | | | X | | | | | | |
| | | | | | | X | | | | | | | | | |
| | | | | | | | | | | | | X | | | |
| | | | | | | | X | | | | | | | | |
| | | | | | | | | | | | X | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8/6/13 | 1620 | Robert Bradshaw | Christine Walters | 8/6/13 | 1620 |
| 8/6/13 | 1937 | Christine Walters | | 08/07/13 | 1000 |

Remarks:

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

# Chain-of-Custody Record

Client: Western Refinery

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
San Juan River 4-15-13

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.5


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1304167 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | DRO - 8015B | WQCC Dissolved Metals | Cations/Anions, TDS, Ec, Alk. | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-15-13 | 9:15 | $H_2O$ | up Stream | 5-VOA | HCl | -001 | | | X | | | | | | | X | | | | | | |
| | | | | 1-liter | amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | filtered | 2-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | X | | |
| 4-15-13 | 9:30 | | Down Stream | 5-VOA | HCl | -002 | | | X | | | | | | | X | | | | | | |
| | | | | 1-liter | amber | | | | | | | | | | | | | X | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | [redacted] | | | |
| | | | filtered | 2-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | X | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 4-15-13 | 3:00 | Robert Krakow | | 04/16/13 | 0920 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |

Remarks:

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name:
San Juan River 4-15-13

Project #:

Project Manager:

Sampler: MATT & Bob
On Ice: ☒ Yes ☐ No
Sample Temperature: 4.2


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1304621 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / [redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | DRO-8015B | WQCC Dissolved Metals | Cations/Anions, TDS, EC, Alk, Cl | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-15-13 | 10:15 | $H_2O$ | North of 45 | 5-VOA | HCl | -003 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | filtered | 2-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | / | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | X | |
| 4-15-13 | 10:30 | | North of 46 | 5-VOA | HCl | -004 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | filtered | 2-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | / | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 4-15-13 | 3:00 | Robert Krakow | | 04/16/13 | 0920 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |

Remarks:

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

# Chain-of-Custody Record

Client: Western Refinery

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: San Juan River 8-6-13

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. |
|---|---|---|---|---|---|---|
| 8-6-13 | 11:15 | H2O | UpStream | 5-VOA | HCl | -003 |
| | | | | 1-liter | amber | |
| | | | | 1-500ml | $HNO_3$ | |
| | | | filtered | 1-250ml | $HNO_3$ | |
| | | | | 1-500ml | — | |
| | | | | 1-250ml | $H_2SO_4$ | |
| 8-6-13 | 12:15 | | DownStream | 5-VOA | HCl | -004 |
| | | | | 1-liter | amber | |
| | | | | 1-500ml | $HNO_3$ | |
| | | | | 1-250ml | $HNO_3$ | |
| | | | | 1-500ml | — | |
| | | | | 1-250ml | $H_2SO_4$ | |

Analysis Request

| Analysis | Requested |
|---|---|
| BTEX + MTBE + TMB's (8021) | |
| BTEX + MTBE + TPH (Gas only) | |
| TPH 8015B (GRO / [redacted]) | X |
| TPH (Method 418.1) | |
| EDB (Method 504.1) | |
| PAH's (8310 or 8270 SIMS) | |
| RCRA 8 Metals TOTAL | X |
| Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | |
| 8081 Pesticides / 8082 PCB's | |
| 8260B (VOA) BTEX, MTBE only | X |
| 8270 (Semi-VOA) | |
| 8015B DRO extended | X |
| Dissolved Metals | X |
| Cations/Anions, TDS, Ec, Alk | X |
| Air Bubbles (Y or N) | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8/6/13 | 1620 | Cobert Kraken | Christine Walls | 8/6/13 | 1620 |
| 8/6/13 | 1737 | Christine Walls | | 08/07/13 | 1000 |

Remarks:
-005 TRIP BLANK - BTEX / 1620
08/07/13

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
San Juan River 8-6-13

Project #:

Project Manager:

Sampler: Matt & Bob

Sample Temperature:

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/[redacted]) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals TOTAL | Anions (F,Cl,$NO_3$,$NO_2$,$PO_4$,$SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | 8015B DRO Extended | Dissolved metals | Cations/Anions, TDS, Ec, Alk | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-6-13 | 1:15 | H2O | North of 45 | 5-VOA | HCl | -001 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | filtered | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | X | |
| 8-6-13 | 1:45 | | North of 46 | 5-VOA | HCl | -002 | | | X | | | | | | | X | | | | | |
| | | | | 1-liter | amber | | | | | | | | | | | | | X | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | |
| | | | filtered | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | |
| | | | | 1-500ml | | | | | | | | | | | | | | | | X | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | | | X | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8/6/13 | 1620 | Robert Krakow | Christine Walker | 8/6/13 | 1628 |
| 8/6/13 | 1737 | Christine Walker | | 08/07/13 | 1000 |

Remarks: See attachment for full Analytical list.

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# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: 4-24-13
San Juan River Bluff Seeps

Project #:

Project Manager:

Sampler: Matt + Bob

Office:

Sampler Temperature:

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1304214 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions (F,Cl,NO3,NO2,PO4,SO4) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Alkalinity, CO2 | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-24-13 | 9:20 | H2O | Seep #1 | 3- VOA | HCl | -001 | | | | | | | | | | X | | | | | | |
| | | | | 1-250ml | H2SO4 | | | | | | | | | X | | | | | | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | X | | | | |
| | 9:30 | | Seep # 3 | 3- VOA | HCl | -002 | | | | | | | | | | X | | | | | | |
| | | | | 1-250ml | H2SO4 | | | | | | | | | X | | | | | | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | X | | | | |
| | 9:15 | | Seep # 6 | 3- VOA | HCl | -003 | | | | | | | | | | X | | | | | | |
| | | | | 1-250ml | H2SO4 | | | | | | | | | X | | | | | | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | X | | | | |
| | 9:45 | | Seep #9 | 3-VOA | HCl | -004 | | | | | | | | | | X | | | | | | |
| | | | | 1-250ml | H2SO4 | | | | | | | | | X | | | | | | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | X | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 1-24-13 | 3:00 | Robert Knokow | | 04/25/13 | 0910 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |

Remarks:
TRIP BLANK - 005

04/25/13

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50CR4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: 8-6-13
San Juan River Bluff Seeps

Project #:

Project Manager:

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.0

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1308216 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Geo. Chem. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-6-13 | 9:15 | $H_2O$ | Seep 1 | 3 VOA | HCl | -001 | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | X |
| | | | | 1-500ml | | | | | | | | | | | | | | X |
| 8-6-13 | 9:25 | | Seep 4 | 3 VOA | HCl | -002 | | | | | | | | | | X | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | | | | | X |
| | | | | 1-500ml | | | | | | | | | | | | | | X |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8/6/13 | 1620 | | Christie Waele | 8/6/13 | 1620 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |
| 8/6/13 | 1937 | Christie Waele | | 08/07/13 | 1000 |

Remarks: See attachment for analytical li

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
San Juan River outfall 8-6-13

Project #:

Project Manager:

Sampler: Matt & Bob
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No 1308-205 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals TOTAL | Anions ($F,Cl,NO_3,NO_2,PO_4,SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Alkalinity, $CO_2$ | Cations Dissolved metals | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-6-13 | 9:45 | $H_2O$ | 3D | 5-VOA | HCl | -001 | | | | | | | | | | X | | | | | | |
| | | | | 1-500ml | $HNO_3$ | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | $HNO_3$ | | | | | | | | | | | | | | X | | | |
| | | | | 1-250ml | $H_2SO_4$ | | | | | | | | | X | | | | | | | | |
| | | | | 1-500ml | | | | | | | | | | | | | | X | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8/6/13 | 1620 | Robert Krakow | Christie Walker | 8/6/13 | 1620 |
| 8/6/13 | 1737 | Christie Walker | | 08/07/13 | 1000 |

Remarks:

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

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: San Juan River Bluff outfall ~~outfalls~~ 8-6-13

Project #:

Project Manager:

Sampler: MAT + Bob

[redacted] Temperature


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | [redacted] | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals Total | Anions (F,Cl,NO3,NO2,PO4,SO4) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) BTEX, MTBE only | 8270 (Semi-VOA) | Alkalinity, CO3 | Total Dissolved Metals | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-6-13 | 9:30 | H2O | #2 | 3-VOA | HCl | -001 | | | | | | | | | | X | | | | | | |
| | | | | 1-500ml | HNO3 | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | HNO3 | | | | | | | | | | | | | | X | | | |
| | | | | 1-250ml | H2SO4 | | | | | | | | | X | · | | | | | | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | X | | | | |
| 8-6-13 | 9:45 | H2O | #3 | 3-VOA | HCl | -002 | | | | | | | | | | X | | | | | | |
| | | | | 1-500ml | HNO3 | | | | | | | | X | | | | | | | | | |
| | | | | 1-250ml | HNO3 | | | | | | | | | | | | | | X | | | |
| | | | | 1-250ml | H2SO4 | | | | | | | | | X | · | | | | | | | |
| | | | | 1-500ml | — | | | | | | | | | | | | | X | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8/6/13 | 1620 | Robert Bracken | Christie Hoots | 8/6/13 | 1620 |
| 8/6/13 | 1937 | Christie Walters | [redacted] | 08/07/13 | 1000 |

Remarks:

# Appendix C

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

# Hall Environmental Analysis Laboratory

## QUALITY ASSURANCE PLAN

## Effective Date: July 29th, 2013

## Revision 9.7

www.hallenvironmental.com

Control Number: 00000144

Approved By:

Laboratory Manager

Approved By:

Carolyn Swanson Date
Quality Assurance/Quality Control Officer

4901 Hawkins NE • Suite D • Albuquerque, NM 87109
505.345.3975 • Fax 505.345.4107
www.hallenvironmental.com

Approved By:

7z5·13

OhnCaldwell Date
Semi-Volatiles Technical Director

Approved By:

\hiw, )\-. 1.JC),\)

Rene Agu Date
Volatiles Technical Director

Approved By:

3

Ian Cameron Date
Inorganics Technical Director

Approved By:

a ,{'- 1/21,3

Chandler Hardison Date
Microbiology Technical Director

# Table of Contents

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## 3.0 Introduction

### Purpose of Document

The purpose of this Quality Assurance Plan is to formally document the quality assurance policies and procedures of Hall Environmental Analysis Laboratory, Inc. (HEAL), for the benefit of its employees, clients, and accrediting organizations. HEAL continually implements all aspects of this plan as an essential and integral part of laboratory operations in order to ensure that high quality data is produced in an efficient and effective manner.

### Objectives

The objective of HEAL is to achieve and maintain excellence in environmental testing. This is accomplished by developing, incorporating and documenting the procedures and policies specified by each of our accrediting authorities and outlined in this plan. These activities are carried out by a laboratory staff that is analytically competent, well-qualified, and highly trained. An experienced management team, knowledgeable in their area of expertise, monitors them. Finally, a comprehensive quality assurance program governs laboratory practices and ensures that the analytical results are valid, defensible, reproducible, reconstructable and of the highest quality.

HEAL establishes and thoroughly documents its activities to ensure that all data generated and processed will be scientifically valid and of known and documented quality. Routine laboratory activities are detailed in method specific standard operating procedures (SOP). All data reported meets the applicable requirements for the specific method or methods that are referenced, ORELAP, TCEQ, EPA, client specific requirements and/or State Bureaus. In the event that these requirements are ever in contention with each other, it is HEAL's policy to always follow the most prudent requirement available. For specific method requirements refer to HEAL's Standard Operating Procedures (SOP's), EPA methods, Standard Methods 20$^{th}$ edition, ASTM methods or state specific methods.

HEAL management ensures that this document is correct in terms of required accuracy and data reproducibility, and that the procedures contain proper quality control measures. HEAL management additionally ensures that all equipment is reliable, well-maintained and appropriately calibrated. The procedures and practices of the laboratory are geared towards not only strictly following our regulatory requirements but also allowing the flexibility to conform to client specific specifications. Meticulous records are maintained for all samples and their respective analyses so that results are well-documented and defensible in a court of law.

The HEAL Quality Assurance/Quality Control Officer (QA/QCO) and upper management are responsible for supervising and administering this quality assurance program, and ensuring each individual is responsible for its proper implementation. All HEAL

management remains committed to the encouragement of excellence in analytical testing and will continue to provide the necessary resources and environment conducive to its achievement.

## Policies

Understanding that quality cannot be mandated, it is the policy of this laboratory to provide an environment that encourages all staff members to take pride in the quality of their work. In addition to furnishing proper equipment and supplies, HEAL stresses the importance of continued training and professional development. Further, HEAL recognizes the time required for data interpretation. Therefore, no analyst should feel pressure to sacrifice data quality for data quantity. Each staff member must perform with the highest level of integrity and professional competence, always being alert to problems that could compromise the quality of their technical work.

Management and senior personnel supervise analysts closely in all operations. Under no circumstance is the willful act or fraudulent manipulation of analytical data condoned. Such acts must be reported immediately to HEAL management. Reported acts will be assessed on an individual basis and resulting actions could result in dismissal. The laboratory staff is encouraged to speak with lab managers or senior management if they feel that there are any undo commercial, financial, or other pressures, which might adversely affect the quality of their work; or in the event that they suspect that data quality has been compromised in any way. HEAL's Quality Assurance/Quality Control Officer is available if any analyst and/or manager wishes to anonymously report any suspected or known breaches in data integrity.

Understanding the importance of meeting customer requirements in addition to the requirements set forth in statutory and regulatory requirements, HEAL shall periodically seek feedback from customers and evaluate the feedback in order to initiate improvements.

All proprietary rights and client information at HEAL (including national security concerns) are considered confidential. No information will be given out without the express verbal or written permission of the client. All reports generated will be held in the strictest of confidence.

HEAL shall continually improve the effectiveness of its management system through the use of the policies and procedures outlined in this Quality Assurance Plan. Quality control results, internal and external audit findings, management reviews, new and continual training and corrective and preventive actions are continually evaluated to identify possible improvements and to ensure that appropriate communication processes are taking place regarding the effectiveness of the management system. HEAL shall ensure that the integrity of the quality system is maintained when changes to the system are planned and implemented.

This is a controlled document. Each copy is assigned a unique tracking number and when released to a client or accrediting agency the QA/QCO keeps the tracking number on file. This document is reviewed on an annual basis to ensure that it is valid and representative of current practices at HEAL.

## 4.0 Organization and Responsibility

### Company

HEAL is accredited in accordance with the 2009 TNI standard (see NELAC accredited analysis list in the QA Department or on the company website), through ORELAP and TCEQ and by the Arizona Department of Health Services. Additionally, HEAL is qualified as defined under the State of New Mexico Water Quality Control Commission regulations and the New Mexico State Drinking Water Bureau. HEAL is a locally owned small business that was established in 1991. HEAL is a full service environmental analysis laboratory with analytical capabilities that include both organic and inorganic methodologies and has performed analyses of soil, water, and air as well as various other matrices for many sites in the region. HEAL's client base includes local, state and federal agencies, private consultants, commercial industries as well as individual homeowners. HEAL has performed as a subcontractor to the state of New Mexico and to the New Mexico Department of Transportation. HEAL has been acclaimed by its customers as producing quality results and as being adaptive to client-specific needs.

The laboratory is divided into an organic section, an inorganic section and a microbiology section. Each section has a designated manager/technical director. The technical directors report directly to the laboratory manager, who oversees all operations.

### Certifications

ORELAP – NELAC Oregon Primary accrediting authority.

TCEQ – NELAC Texas Secondary accrediting authority.

The Arizona Department of Health Services

The New Mexico Drinking Water Bureau

See our website at www.hallenvironmental.com or the QA Office for copies of current licenses and licensed parameters, .

In the event of a certification being revoked or suspended, HEAL will notify, in writing, those clients that require the affected certification.

## Personnel

HEAL management ensures the competence of all who operate equipment, perform environmental tests, evaluate results, and sign test reports. Personnel performing specific tasks shall be qualified on the basis of appropriate education, training, experience and /or demonstrated skills.

HEAL ensures that all personnel are aware of the relevance and importance of their activities and how each employee contributes to the achievement of the objectives defined throughout this document.

All personnel shall be responsible for complying with HEAL's quality assurance/quality control requirements that pertain to their technical function. Each technical staff member must have a combination of experience and education to adequately demonstrate specific knowledge of their particular function and a general knowledge of laboratory operations, test methods, quality assurance/quality control procedures, and records management.

All employees' training certificates and diplomas are kept on file with demonstrations of capability for each method they perform. An Organizational Chart can be found at the end of this section and a personnel list is available in the current Controlled Document Logbook.

### Laboratory Director

The Laboratory Director is responsible for overall technical direction and business leadership of HEAL. The Laboratory Manager, the Project Manager and Quality Assurance/Quality Control Officer report directly to the Laboratory Director. Someone with a minimum of 7 years of directly related experience and a bachelor's degree in a scientific or engineering discipline should fill this position.

### Laboratory Manager/Lead Technical Director

The Laboratory Manager shall exercise day–to-day supervision of laboratory operations for the appropriate fields of accreditation and reporting of results. The Laboratory Manager shall be experienced in the fields of accreditation for which the laboratory is approved or seeking accreditation. The Laboratory Manager shall certify that personnel with appropriate educational and/or technical background perform all tests for which HEAL is accredited. Such certification shall be documented.

The Laboratory Manager shall monitor standards of performance in quality control and quality assurance and monitor the validity of the analyses performed and data generated at HEAL to assure reliable data.

The Laboratory Manager is responsible for the daily operations of the laboratory. The Laboratory Manager is the lead technical director of the laboratory and, in conjunction

with the section technical directors, is responsible for coordinating activities within the laboratory with the overall goal of efficiently producing high quality data within a reasonable time frame.

In events where employee scheduling or current workload is such that new work cannot be incorporated, without missing hold times, the Laboratory Manager has authority to modify employee scheduling, re-schedule projects or, when appropriate, allocate the work to approved subcontracting laboratories.

Additionally, the laboratory manager reviews and approves new analytical procedures and methods, and performs a final review of most analytical results. The Laboratory Manager provides technical support to both customers and HEAL staff.

The Laboratory Manager also observes the performance of supervisors to ensure that good laboratory practices and proper techniques are being taught and utilized, and to assist in overall quality control implementation and strategic planning for the future of the company. Other duties include assisting in establishing laboratory policies that lead to the fulfillment of requirements for various certification programs, assuring that all Quality Assurance and Quality Control documents are reviewed and approved, and assisting in conducting Quality Assurance Audits.

The laboratory manager addresses questions or complaints that cannot be answered by the section managers.

The Laboratory Manager shall have a bachelor's degree in a chemical, environmental, biological sciences, physical sciences or engineering field, and at least five years of experience in the environmental analysis of representative inorganic and organic analytes for which the laboratory seeks or maintains accreditation.

**Quality Assurance Quality Control Officer**

The Quality Assurance/Quality Control Officer (QA/QCO) serves as the focal point for QA/QC and shall be responsible for the oversight and/or review of quality control data. The QA/QCO functions independently from laboratory operations and shall be empowered to halt unsatisfactory work and/or prevent the reporting of results generated from an out-of-control measurement system. The QA/QCO shall objectively evaluate data and perform assessments without any outside/managerial influence. The QA/QCO shall have direct access to the highest level of management at which decisions are made on laboratory policy and/or resources. The QA/QCO shall notify laboratory management of deficiencies in the quality system in periodic, independent reports.

The QA/QCO shall have general knowledge of the analytical test methods for which data review is performed and have documented training and/or experience in QA/QC procedures and in the laboratory's quality system. The QA/QCO will have a

minimum of a BS in a scientific or related field and a minimum of three years of related experience.

The QA/QCO shall schedule and conduct internal audits as per the Internal Audit SOP at least annually, monitor and trend Corrective Action Reports as per the Data Validation SOP, periodically review control charts for out of control conditions, and initiate any appropriate corrective actions.

The QA/QCO shall oversee the analysis of proficiency testing in accordance with our standards and monitor any corrective actions issued as a result of this testing.

The QA/QCO reviews all standard operating procedures and statements of work in order to assure their accuracy and compliance to method and regulatory requirements.

The QA/QCO shall be responsible for maintaining and updating this quality manual.

**Project Managers**

The role of the project manager is to act as a liaison between HEAL and our clients. The Project Manager updates clients on the status of projects in-house, prepares quotations for new work, and is responsible for HEAL's marketing effort.

All new work is assessed by the Project Manager and reviewed with the other managers so as to not exceed the laboratory's capacity. In events where employee scheduling or current workload is such that new work cannot be incorporated without missing hold times, the Project Manager has authority to re-schedule projects.

It is also the duty of the project manager to work with the Laboratory Manager and QA/QCO to insure that before new work is undertaken, the resources required and accreditations requested are available to meet the client's specific needs.

Additionally, the Project Manager can initiate the review of the need for new analytical procedures and methods, and perform a final review of some analytical results. The Project Manager provides technical support to customers. Someone with a minimum of 2 years of directly related experience and a bachelor's degree in a scientific or engineering discipline should fill this position.

**Technical Directors**

Technical Directors are full-time members of the staff at HEAL who exercise day-to-day supervision of laboratory operations for the appropriate fields of accreditation and reporting of results for their department within HEAL. A Technical Director's duties shall include, but not be limited to, monitoring standards of performance in quality

control and quality assurance, monitoring the validity of the analyses performed and the data generated in their sections to ensure reliable data, overseeing training and supervising departmental staff, scheduling incoming work for their sections, and monitoring laboratory personnel to ensure that proper procedures and techniques are being utilized. They supervise and implement new Quality Control procedures as directed by the QA/QCO, update and maintain quality control records including, but not limited to, training forms, IDOCs, ADOCPs, and MDLs, and evaluate laboratory personnel in their Quality Control activities. In addition, technical directors are responsible for upholding the spirit and intent of HEAL's data integrity procedures.

As Technical Directors of their associated section, they review analytical data to acknowledge that data meets all criteria set forth for good Quality Assurance practices. Someone with a minimum of 2 years of experience in the environmental analysis of representative analytes for which HEAL seeks or maintains accreditation and a bachelor's degree in a scientific or related discipline should fill this position.

The education requirements for a Technical Director may be waived at the discretion of HEAL's accrediting agencies.

**Section Supervisors**

Section Supervisors are full time members of staff at HEAL who exercise day-to-day supervision of laboratory operations for the appropriate fields of accreditation and reporting of results for their department within HEAL. Section Supervisors report directly to their technical director. A Section Supervisor's duties shall include, but not be limited to, monitoring standards of performance in quality control and quality assurance, monitoring the validity of the analyses performed and the data generated in their sections to ensure reliable data, overseeing training and supervising departmental staff, scheduling incoming work for their sections, and monitoring laboratory personnel to ensure that proper procedures and techniques are being utilized. They supervise and implement new Quality Control procedures as directed by the QA/QCO, update and maintain quality control records including, but not limited to, training forms, IDOCs, ADOCPs, and MDLs, and evaluate laboratory personnel in their Quality Control activities. In addition, Section Supervisors are responsible for upholding the spirit and intent of HEAL's data integrity procedures. Section Supervisors update their Technical Director on the status and needs of their departments and submit all Quality Control documents to their technical director for their review, approval and signature.

As section supervisors, they review analytical data to acknowledge that data meets all criteria set forth for good Quality Assurance practices. Someone with a minimum of 2 years of experience in the environmental analysis of representative analytes for which HEAL seeks or maintains accreditation and a bachelor's degree, or equivalent experience in a scientific or related discipline should fill this position.

**Health and Safety / Chemical Hygiene Officer**

Refer to the most recent version of the Health and Safety and Chemical Hygiene Plans for the roles, responsibilities, and basic requirements of the Health and Safety Officer (H&SO) and the Chemical Hygiene Officer (CHO). These jobs can be executed by the same employee.

**Analyst I, II and III**

Analysts are responsible for the analysis of various sample matrices including, but not limited to, solid, aqueous, and air, as well as the generation of high quality data in accordance with the HEAL SOPs and QA/QC guidelines in a reasonable time as prescribed by standard turnaround schedules or as directed by the Section Manager or Laboratory Manager.

Analysts are responsible for making sure all data generated is entered in the database in the correct manner and the raw data is reviewed, signed and delivered to the appropriate peer for review. An analyst reports daily to the section manager and will inform them as to material needs of the section specifically pertaining to the analyses performed by the analyst. Additional duties may include preparation of samples for analysis, maintenance of lab instruments or equipment, and cleaning and providing technical assistance to lower level laboratory staff.

The senior analyst in the section may be asked to perform supervisory duties as related to operational aspects of the section. The analyst may perform all duties of a lab technician.

The position of Analyst is a full or part time hourly position and is divided into three levels, Analyst I, II, and III. All employees hired into an Analyst position at HEAL must begin as an Analyst I and remain there at a minimum of three months regardless of their education and experience. Analyst I must have a minimum of an AA in a related field or equivalent experience (equivalent experience means years of related experience can be substituted for the education requirement). An Analyst I is responsible for analysis, instrument operation, including calibration and data reduction. Analyst II must have a minimum of an AA in a related field or equivalent experience and must have documented and demonstrated aptitude to perform all functions of an Analyst II. An Analyst II is responsible for the full analysis of their test methods, routine instrument maintenance, purchase of consumables as dictated by their Technical Director, advanced data reduction, and basic data review. Analyst II may also assist Analyst III in method development and, as dictated by their Technical Director, may be responsible for the review and/or revision of their method specific SOPs. Analyst III must have Bachelors degree or equivalent experience and must have documented and demonstrated aptitude to perform all functions of an Analyst III. An Analyst III is responsible for all tasks completed by an Analyst I and II as well as advanced data

review, non-routine instrument maintenance, assisting their technical director in basic supervisory duties and method development.

### Laboratory Technician

A laboratory technician is responsible for providing support to analysts in the organics, inorganics and disposal departments. Laboratory Technicians can assist analysts in basic sample preparation, general laboratory maintenance, glassware washing, chemical inventories, sample disposal and sample kit preparation. This position can be filled by someone without the education and experience necessary to obtain a position as an analyst.

### Sample Control Manager

The sample control manager is responsible for receiving samples and reviewing the sample login information after it has been entered into the computer. The sample control manager also checks the samples against the chain-of-custody for any sample and/or labeling discrepancies prior to distribution.

The sample control manager is responsible for sending out samples to the sub-contractors along with the review and shipping of field sampling bottle kits. The sample control manager acts as a liaison between the laboratory and field sampling crew to ensure that the appropriate analytical test is assigned. If a discrepancy is noted, the sample control manager or sample custodian will contact the customer to resolve any questions or problems. The sample control manager is an integral part of the customer service team.

This position should be filled by someone with a high school diploma and a minimum of 2 years of related experience and can also be filled by a senior manager.

### Sample Custodians

Sample Custodians work directly under the Sample Control Manager. They are responsible for sample intake into the laboratory and into the LIMS. Sample Custodians take orders from our clients and prepare appropriate bottle kits to meet the clients' needs. Sample Custodians work directly with the clients in properly labeling and identifying samples as well as properly filling out legal COCs. When necessary, Sample Custodians contact clients to resolve any questions or problems associated with their samples. Sample Custodians are responsible for distributing samples throughout the laboratory and are responsible for notifying analysts of special circumstances such as short holding times or improper sample preservation upon receipt.

### Sample Disposal Custodian

The sample disposal custodian is responsible for characterizing and disposing of samples in accordance to the most recent version of the sample disposal SOP. The sample disposal custodian collects waste from the laboratory and transports it to the disposal warehouse for storage and eventual disposal. The sample disposal custodian is responsible for maintaining the disposal warehouse and following the requirements for documentation, integrity, chemical hygiene and health and safety as set forth in the various HEAL administrative SOPs. The sample disposal custodian is responsible for overseeing any laboratory technicians employed at the disposal warehouse.

This position should be filled by someone with a high school diploma and a minimum of 1 year of related experience.

### Bookkeeper

The Bookkeeper is responsible for the preparation of quarterly financials and quarterly payroll reports. The bookkeeper monitors payables, receivables, deposits, pays all bills and maintains an inventory of administrative supplies. The Bookkeeper completes final data package assembly and oversees the consignment of final reports. The Bookkeeper assists in the project management of drinking water compliance samples for NMED and NMEFC and any other tasks as assigned by the Laboratory Manager. This position should be filled by someone with a degree in accounting or a minimum of a high school diploma and at least 4 years of directly related experience.

### Administrative Assistant

The Administrative Assistant is responsible for aiding administrative staff in tasks that include but are not limited to: the processing and consignment of final reports, and the generation of client specific spreadsheets. This position should be filled by someone with a minimum of a high school diploma.

### IT Specialist

The IT Specialist is responsible for the induction and maintenance of all hard and software technology not maintained through a service agreement. The IT Specialist follows the requirements of this document, all regulatory documents and the EPAs Good Automated Laboratory Practices. This position should be filled by someone with a degree in a computer related field, or at least two years of directly related experience.

## Delegations in the Absence of Key Personnel

Planned absences shall be preceded by notification to the Laboratory Manager. The appropriate staff members shall be informed of the absence. In the case of unplanned absences, the superior shall either assume the responsibilities and duties or delegate the responsibilities and duties to another appropriately qualified employee.

In the event that the Laboratory Manager is absent for a period of time exceeding fifteen consecutive calendar days, another full-time staff member meeting the basic qualifications and competent to temporarily perform this function will be designated. If this absence exceeds thirty-five consecutive calendar days, HEAL will notify ORELAP in writing of the absence and the pertinent qualifications of the temporary laboratory manager.

**Laboratory Personnel Qualification and Training**

All personnel joining HEAL shall undergo orientation and training. During this period the new personnel shall be introduced to the organization and their responsibilities, as well as the policies and procedures of the company. They shall also undergo on-the-job training and shall work with trained staff. They will be shown required tasks and be observed while performing them.

When utilizing staff undergoing training, appropriate supervision shall be dictated and overseen by the appropriate section technical director. Prior to analyzing client samples, a new employee, or an employee new to a procedure, must meet the following basic requirements. The SOP and Method(s) for the analysis must be read and signed by the employee indicating that they read, understand, and intend to comply with the requirements of the documents. The employee must undergo documented training. Training is conducted by a senior analyst familiar with the procedure and overseen by the section Technical Director. This training is documented by any means deemed appropriate by the trainer and section Technical Director, and kept on file in the employees file located in the QA/QCO's office. The employee must perform a successful Initial Demonstration of Proficiency (IDOC). See the current Document Control Logbook for the training documents and checklists utilized at HEAL to ensure that all of these requirements are met. Once all of the above requirements are met it is incumbent upon the section Technical Director to determine at which point the employee can begin to perform the test unsupervised. A Certification to Complete Work Unsupervised (see the current Document Control Logbook) is then filled out by the employee and technical director.

IDOCs are required for all new analysts and methods prior to sample analysis. IDOCs are also required any time there is a change in the instrument, analyte list or method. If more than twelve months have passed since an analyst performed an IDOC and they have not performed the method and/or have not met the continuing DOC requirements, the analyst must perform an IDOC prior to resuming the test.

All IDOCs shall be documented through the use of the certification form which can be found in the current Document Control Logbook. IDOCs are performed by analyzing four Laboratory Control Spikes (LCSs). Using the results of the LCSs the mean recovery is calculated in the appropriate reporting units and the standard deviations of the population sample (n-1) (in the same units) as well as the relative percent difference for each parameter of interest. When it is not possible or pertinent to determine mean and standard deviations HEAL assesses performance against establish and documented criteria dictated in the method SOP. The mean and standard deviation are compared to the corresponding acceptance criteria for precision and accuracy in the test method (if applicable) or in laboratory-generated acceptance criteria. In the event that the HEAL SOP or test method(s) fail to establish the pass/fail criteria the default limits of +/- 20% for calculated recovery and <20% relative percent difference based on the standard deviation will be utilized. If all parameters meet the acceptance criteria, the IDOC is successfully completed. If any one of the parameters do not meet the acceptance criteria, the performance is unacceptable for that parameter and the analyst must either locate and correct the source of the problem and repeat the test for all parameters of interest or repeat the test for all parameters that failed to meet criteria. Repeat failure, however, confirms a general problem with the measurement system. If this occurs the source of the problem must be identified and the test repeated for all parameters of interest.

New employees that do not have prior analysis experience will not be allowed to perform analysis until they have demonstrated attention to detail with minimal errors in the assigned tasks. To ensure a sustained level of quality performance among staff members, continuing demonstration of capability shall be performed at least once a year. These are as an Annual Documentation of Continued Proficiency (ADOCP).

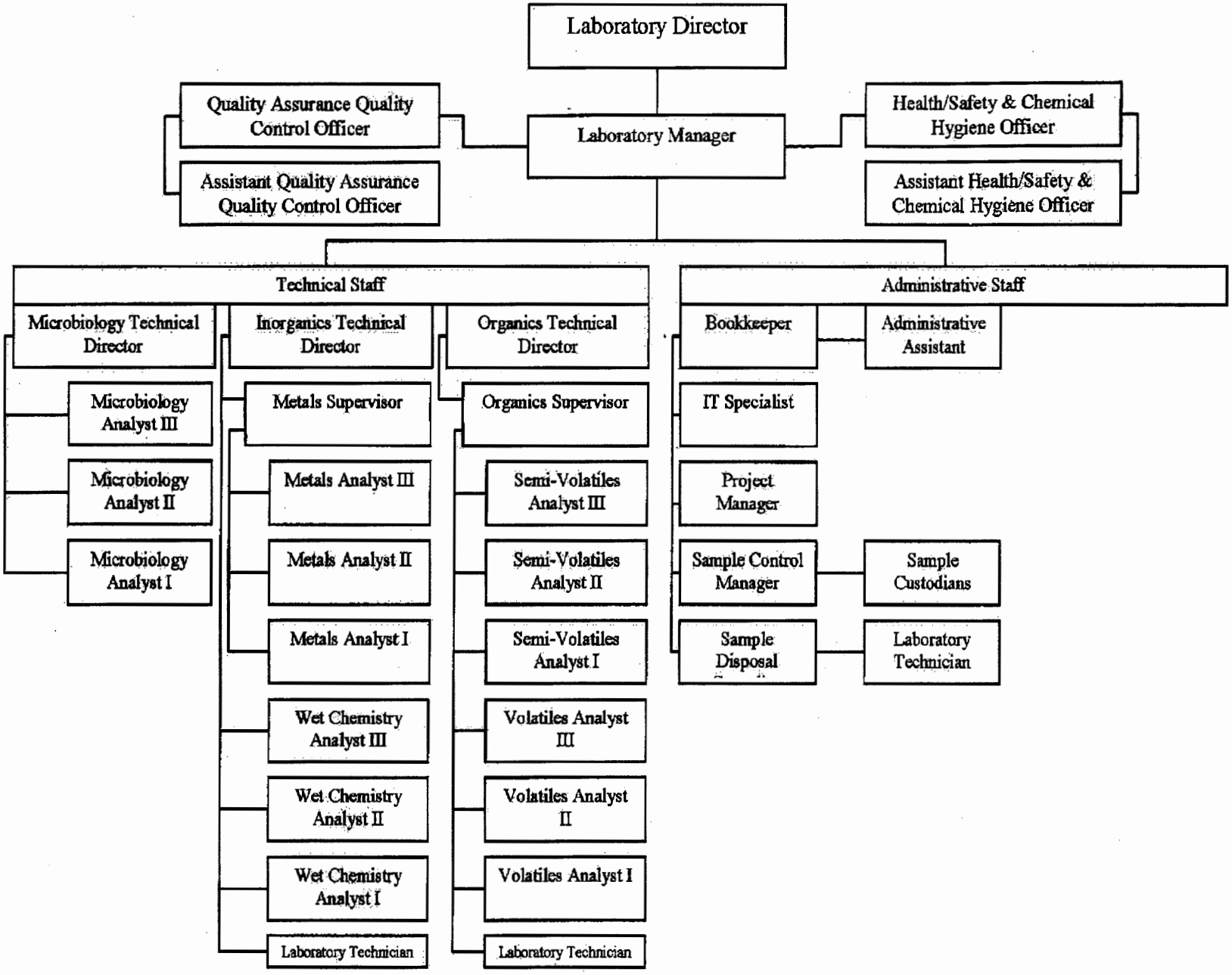
At least once per year an ADOCP must be completed. This is achieved by the acceptable performance of a blind sample (typically by using a PT sample, but can be a single blind (to the analyst) sample), by performing another IDOC, or by summarizing the data of four consecutive laboratory control samples with acceptable levels of precision and accuracy (these limits are those currently listed in the LIMS for an LCS using the indicated test method(s).) ADOCPs are documented using a standard form and are kept on file in each analyst's employee folder.

Each new employee shall be provided with data integrity training as a formal part of their new employee orientation. Each new employee will sign an ethics and data integrity agreement to ensure that they understand that data quality is our main objective. Every HEAL employee recognizes that although turn around time is important, quality is put above any pressure to complete the task expediently. Analysts are not compensated for passing QC parameters nor are incentives given for the quantity of work produced. Data Integrity and Ethics training are performed on an annual basis in order to remind all employees of HEAL's policy on data quality. Employees are required to understand that any infractions of the laboratory data integrity procedures will result in a detailed investigation that could lead to very serious

consequences including immediate termination, debarment, or civil/criminal prosecution.

Training for each member of HEAL's technical staff is further established and maintained through documentation that each employee has read, understood, and is using the latest version of this Quality Assurance Manual. Training courses or workshops on specific equipment, analytical techniques, or laboratory procedures are documented through attendance sheets, certificates of attendance, training forms, or quizzes. This training documentation is located in analyst specific employee folders in the QA/QCO Office. On the front of all methods, SOPs, and procedures for HEAL, there is a signoff sheet that is signed by all pertinent employees, indicating that they have read, understand, and agree to perform the most recent version of the document.

The effectiveness of training will be evaluated during routine data review, annual employee reviews, and internal and external audits. Repetitive errors, complaints and audit findings serve as indicators that training has been ineffective. When training is deemed to have been ineffective a brief review of the training process will be completed and a re-training conducted as soon as possible.


Laboratory Director
Quality Assurance Quality Control Officer
Assistant Quality Assurance Quality Control Officer
Laboratory Manager
Health/Safety & Chemical Hygiene Officer
Assistant Health/Safety & Chemical Hygiene Officer
Technical Staff
Administrative Staff
Microbiology Technical Director
Inorganics Technical Director
Organics Technical Director
Bookkeeper
Administrative Assistant
Microbiology Analyst III
Microbiology Analyst II
Microbiology Analyst I
Metals Supervisor
Metals Analyst III
Metals Analyst II
Metals Analyst I
Wet Chemistry Analyst III
Wet Chemistry Analyst II
Wet Chemistry Analyst I
Laboratory Technician
Organics Supervisor
Semi-Volatiles Analyst III
Semi-Volatiles Analyst II
Semi-Volatiles Analyst I
Volatiles Analyst III
Volatiles Analyst II
Volatiles Analyst I
Laboratory Technician
IT Specialist
Project Manager
Sample Control Manager
Sample Custodians
Sample Disposal
Laboratory Technician

## 5.0 Receipt and Handling of Samples

### Reviewing Requests, Tenders and Contracts

All contracts and written requests by clients are closely reviewed to ensure that the client's data quality objectives can be met to their specifications. This review includes making sure that HEAL has the resources necessary to perform the tests to the clients specifications.

When HEAL is unable to meet the clients specifications their samples will be subcontracted to an approved laboratory capable of meeting the client's data quality objectives.

### Sampling

#### Procedures

HEAL does not provide field sampling for any projects. Sample kits are prepared and provided for clients upon request. The sample kits contain the appropriate sampling containers (with a preservative when necessary), labels, blue ice (The use of "blue ice" by anyone except HEAL personnel is discouraged because it generally does not maintain the appropriate temperature of the sample. If blue ice is used, it should be completely frozen at the time of use, the sample should be chilled before packing, and special notice taken at sample receipt to be certain the required temperature has been maintained.), a cooler, chain-of-custody forms, plastic bags, bubble wrap, and any special sampling instructions. Sample kits are reviewed prior to shipment for accuracy and completeness.

#### Containers

Containers which are sent out for sampling are purchased by HEAL from a commercial source. Glass containers are certified "EPA Cleaned" QA level 1. Plastic containers are certified clean when required. These containers are received with a Certificate of Analysis verifying that the containers have been cleaned according to the EPA wash procedure. Containers are used once and discarded. If the samples are collected and stored in inappropriate containers the laboratory may not be able to accurately quantify the amount of the desired components. In this case, re-sampling may be required.

#### Preservation

If sampling for analyte(s) requires preservation, the sample custodians fortify the containers prior to shipment to the field, or provide the preservative for the sampler to add in the field. The required preservative is introduced into the vials in uniform amounts and done so rapidly to minimize the risk of contamination. Vials that contain a

preservative are labeled appropriately. If the samples are stored with inappropriate preservatives, the laboratory may not be able to accurately quantify the amount of the desired components. In this case re-sampling may be required.

Refer to the current Login SOP and/or the current price book for detailed sample receipt and handling procedures, appropriate preservation and holding time requirements.

## Sample Custody

### Chain-of-Custody Form

A Chain-of-Custody (COC) form is used to provide a record of sample chronology from the field to receipt at the laboratory. HEAL's COC contains the client's name, address, phone and fax numbers, the project name and number, the project manager's name, and the field sampler's name. It also identifies the date and time of sample collection, sample matrix, field sample ID number, number/volume of sample containers, sample temperature upon receipt, and any sample preservative information.

There is also a space to record the HEAL ID number assigned to samples after they are received. Next to the sample information is a space for the client to indicate the desired analyses to be performed. There is a section for the client to indicate the data package level as well as any accreditation requirements. Finally, there is a section to track the actual custody of the samples. The custody section contains lines for signatures, dates and times when samples are relinquished and received. The COC form also includes a space to record special sample related instructions, sampling anomalies, time constraints, and any sample disposal considerations.

It is paramount that all COCs arrive at HEAL complete and accurate so that the samples can be processed and allocated for testing in a timely and efficient manner. A sample chain-of-custody form can be found in the current Document Control Logbook or on line at www.hallenvironmental.com.

Should a specific project or client require the use of an internal COC, advanced notification and approval must be obtained. The use of internal COCs are not part of our standard operating procedure.

### Receiving Samples

Samples are received by authorized HEAL personnel. Upon arrival, the COC is compared to the respective samples. After the samples and COC have been determined to be complete and accurate, the sampler signs over the COC. The HEAL staff member in turn signs the chain-of-custody, also noting the current date, time, and sample temperature. This relinquishes custody of the samples from the sampler and delegates sample custody to HEAL. The first (white) copy of the COC form is filed in the appropriate sample folder. The second (yellow) copy of the COC form is filed in the

COC file in the sample control manager's office. The third (pink) copy of the COC form is given to the person who has relinquished custody of the samples.

**Logging in Samples and Storage**

Standard Operating Procedures have been established for the receiving and tracking of all samples (refer to the current HEAL Login SOP). These procedures ensure that samples are received and properly logged into the laboratory and that all associated documentation, including chain of custody forms, is complete and consistent with the samples received. Each sample set is given a unique HEAL tracking ID number. Individual sample locations within a defined sample set are given a unique sample ID suffix-number. Labels with the HEAL numbers, and tests requested, are generated and placed on their respective containers. The pH of preserved, non-volatile samples is checked and noted if out of compliance. Due to the nature of the samples, the pHs of volatiles samples are checked after analysis. Samples are reviewed prior to being distributed for analysis.

All samples received that are requested for compliance, whether on the COC or by contract, will be identified as compliance samples in the LIMS so as to properly notify the analytical staff that they are to be analyzed in accordance with the test method(s) as well as the compliance requirements.

Samples are distributed for analysis based upon the requested tests. In the event that sample volume is limited and different departments at HEAL are required to share the sample, volatile work takes precedence and will always be analyzed first before the sample is sent to any other department for analysis.

Care will be taken to store samples isolated from laboratory contaminants, standards and highly contaminated samples.

All samples that require thermal preservation shall be acceptably stored at a temperature range just above freezing to 6 °C unless specified at another range by the SOP and Method.

Each project (sample set) is entered into the Laboratory Information Management System (LIMS) with a unique ID that will be identified on every container. The ID tag includes the Lab ID, Client ID, date and time of collection, and the analysis/analyses to be performed. The LIMS continually updates throughout the lab. Therefore, at any time, an analyst or manager may inquire about a project and/or samples status. For more information about the login procedures, refer to the Sample Login SOP.

**Disposal of Samples**

Samples are held at HEAL for a minimum of thirty days and then transferred to the HEAL warehouse for disposal. Analytical results are used to characterize their respective sample contamination level(s) so that the proper disposal can be performed. These wastes will be disposed of according to their hazard as well as their type and level of contamination. Refer to the Hall Environmental Analysis Laboratory Chemical Hygiene Plan and current Sample Disposal SOP for details regarding waste disposal.

Waste drums are provided by an outside agency. These drums are removed by the outside agency and disposed of in a proper manner.

The wastes that are determined to be non-hazardous are disposed of as non-hazardous waste in accordance with the Chemical Hygiene Plan and Sample Disposal SOP.

## 6.0 Analytical Procedures

All analytical methods used at HEAL incorporate necessary and sufficient Quality Assurance and Quality Control practices. A Standard Operating Procedure (SOP) is used to provide the necessary criteria to yield acceptable results. These procedures are reviewed at least annually and revised as necessary and are attached as a pdf file in the Laboratory Information Management System (LIMS) for easy access by each analyst. The sample is often consumed or altered during the analytical process. Therefore, it is important that each step in the analytical process be correctly followed in order to yield valid data.

When unforeseen problems arise, the analyst, technical director, and, when necessary, laboratory manager meet to discuss the factors involved. The analytical requirements are evaluated and a suitable corrective action or resolution is established. The client is notified in the case narrative with the final report or before, if the validity of their result is in question.

### List of Procedures Used

Typically, the procedures used by HEAL are EPA approved methodologies or 20$^{th}$ edition Standard Methods. However, proprietary methods for client specific samples are sometimes used. On occasion, multiple methods or multiple method revisions are used, in this event the SOP is written to include the requirements of all referenced methods. The following tables list EPA and Standard Methods Method numbers with their corresponding analytes and/or instrument classification.

**Methods Utilized at HEAL**

Drinking Water(DW) Non-Potable Water (NPW) Solids (S)

| Methodology | Matrix | Title of Method |
|---|---|---|
| 180.1 | DW<br>NPW | "Turbidity (Nephelometric)" |
| 200.2 | DW<br>NPW | "Sample Preparation Procedure For Spectrochemical Determination of Total Recoverable Elements" |
| 200.7 | DW<br>NPW | "Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry" |
| 200.8 | DW<br>NPW | "Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry." |
| 245.1 | DW<br>NPW | "Mercury (Manual Cold Vapor Technique)" |

| | | |
|---|---|---|
| 300.0 | DW<br>NPW<br>S | "Determination of Inorganic Anions by Ion Chromatography" |
| 413.2 | NPW<br>S | "Oil and Grease" |
| 418.1 | NPW<br>S | "Petroleum Hydrocarbons (Spectrophotometric, Infrared)" |
| 504.1 | DW | "EDB, DBCP and 123TCP in Water by Microextraction and Gas Chromatography" |
| 524.2 | DW | "Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry" |
| 552.3 | DW | "Determination of Haloacetic Acids and Dalapon in Drinking Water by Ion-Exchange Liquid-Solid Extraction and Gas Chromatography with an Electron Capture Detector" |
| 624 | NPW | Appendix A to Part 136 Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater Method 624-Purgeables" |
| 1311 | S | "Toxicity Characteristic Leaching Procedure" |
| 1311ZHE | S | "Toxicity Characteristic Leaching Procedure" |
| 1664A | NPW | "N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material) by Extraction and Gravimetry" |
| 3005A | NPW | "Acid Digestion of Waters for Total Recoverable or Dissolved Metals for Analysis by FLAA or ICP Spectroscopy" |
| 3010A | NPW | "Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by FLAA or ICP Spectroscopy" |
| 3050B | S | "Acid Digestion of Sediment, Sludge, and Soils" |
| 3510C | DW<br>NPW | "Separatory Funnel Liquid-Liquid Extraction" |
| 3540 | S | "Soxhlet Extraction" |
| 3545 | S | "Pressurized Fluid Extraction(PFE)" |
| 3665 | NPW<br>S | "Sulfuric Acid/Permanganate Cleanup" |
| 5030B | NPW | "Purge-and-Trap for Aqueous Samples" |
| 5035 | S | "Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples" |
| 6010B | NPW<br>S | "Inductively Coupled Plasma-Atomic Emission Spectrometry" |
| 7470A | NPW | "Mercury in Liquid Waste (Manual Cold-Vapor Technique)" |

| | | |
|---|---|---|
| 7471A | S | "Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)" |
| 8021B | NPW<br>S | "Aromatic and Halogenated Volatiles By Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors" |
| 8015D | NPW<br>S | "Nonhalogenated Volatile Organics by Gas Chromatography"<br>(Gasoline Range and Diesel Range Organics) |
| 8081A | NPW<br>S | "Organochlorine Pesticides by Gas Chromatography" |
| 8082 | NPW<br>S | "Polychlorinated Biphenyls (PCBs) by Gas Chromatography" |
| 8260B | NPW<br>S | "Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS)" |
| 8270C | NPW<br>S | "Semivolatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS)" |
| 8310 | NPW<br>S | "Polynuclear Aromatic Hydrocarbons" |
| 9060 | NPW | "Total Organic Carbon" |
| 9067 | NPW<br>S | "Phenolics (Spectrophotometric, MBTH With Distillation)" |
| 9095A | S | "Paint Filter Liquids Test" |
| H-8167 | DW<br>NPW | "Method 8167 Chlorine, Total" |
| Walkley/Black | S | FOC/TOC WB |
| SM2320 B | DW<br>NPW | "Alkalinity" |
| SM2340B | NPW | "2340 Hardness" |
| SM2510B | DW<br>NPW | "2510 Conductivity" |
| SM2540 B | NPW | "Total Solids Dried at 103-105° C" |
| SM2540 C | DW<br>NPW | "Total Dissolved Solids Dried at 180° C" |
| SM2540 D | NPW | "Total Suspended Solids Dried at 103-105° C" |
| SM4500-H+B | DW<br>NPW | "pH Value" |
| SM4500-NH3 C | NPW<br>S | "4500-NH3" Ammonia |
| SM4500-Norg C | NPW<br>S | "4500-Norg" Total Kjeldahl Nitrogen (TKN) |

| | | |
|---|---|---|
| SM5210 B | NPW | "5210 B. 5-day BOD Test" |
| SM5310 B | DW | "5310" Total Organic Carbon (TOC) |
| SM9223B | NPW<br>DW | "9223 Enzyme Substrate Coliform Test" |
| 8000B | NPW<br>S | "Determinative Chromatographic Separations" |
| 8000C | NPW<br>S | "Determinative Chromatographic Separations" |

**Criteria for Standard Operating Procedures**

HEAL has Standard Operating Procedures (SOPs) for each of the test methods listed above. These SOPs are based upon the listed methods and detail the specific procedure and equipment utilized as well as the quality requirements necessary to prove the integrity of the data. SOPs are reviewed or revised every twelve months or sooner if necessary. The review/revision is documented in the Master SOP Logbook filed in the QA/QC Office. All SOPs are available in the LIMS under the Documents and SOPs menu.
Hand written corrections or alterations to SOPs are not permitted. In the event that a correction is needed and a revision is not immediately possible, a corrective action report will be generated documenting the correction or alteration, signed by the section Technical Director and the QA/QC Officer and will be scanned into the current SOP and will document the change until a new revision is possible.

Controlled documents such as calibration summary forms, analysis bench sheets, etc. are tracked as appendices in SOPs, through the Controlled Document Logbook with copies available through the LIMS or through the MOAL as bound logbooks.

Each HEAL test method SOP shall include or reference the following topics where applicable:

Identification of the test method;
Applicable matrix or matrices;
Limits of detection and quantitation;
Scope and application, including parameters to be analyzed;
Summary of the test method;
Definitions;
Interferences;
Safety;
Equipment and supplies;
Reagents and standards;
Sample collection, preservation, shipment and storage;
Quality control parameters;

Calibration and standardization;
Procedure;
Data analysis and calculations;
Method performance;
Pollution prevention;
Data assessment and acceptance criteria for quality control measures;
Corrective actions for out-of-control data;
Contingencies for handling out-of-control or unacceptable data;
Waste management;
References; and
Any tables, diagrams, flowcharts and validation data.

## 9 Calibration

All equipment and instrumentation used at HEAL are operated, maintained and calibrated according to manufacturers' guidelines, as well as criteria set forth in applicable analytical methodology. Personnel who have been properly trained in their procedures perform the operation and calibration. Brief descriptions of the calibration processes for our major laboratory equipment and instruments are found below.

### Thermometers

The thermometers in the laboratory are used to measure the temperatures of the refrigerators, freezers, ovens, water baths, incubators, hot blocks, ambient laboratory conditions, TCLP Extractions, digestion blocks, and samples at the time of log-in. All NIST traceable thermometers are either removed from use upon their documented expiration date or they are checked annually with a NIST-certified thermometer and a correction factor is noted on each thermometer log. See the most current Login SOP for detailed procedures on this calibration procedure.

Data Loggers are used to record refrigerator temperatures. These data loggers are calibrated quarterly with NIST-certified thermometers.

The NIST thermometer should be recalibrated at least every five years or whenever the thermometer has been exposed to temperature extremes.

### Refrigerators/Freezers

Each laboratory refrigerator or freezer contains a thermometer capable of measuring to a minimum precision of 0.1°C. The thermometers are kept with the bulb immersed in liquid. Each day of use, the temperatures of the refrigerators are recorded to insure that the refrigerators are within the required designated range. Samples are stored separately from the standards to reduce the risk of contamination.

See the current Catastrophic Failure SOP for the procedure regarding how to handle failed refrigerators or freezers.

### Ovens

The ovens contain thermometers graduated by 1° C. The ovens are calibrated quarterly against NIST thermometers and checked each day of use as required and in whatever way is dictated by or appropriate for the method in use.

**Analytical and Table Top Balances**

The table top balances are capable of weighing to a minimum precision of 0.01 grams. The analytical balances are capable of weighing to a minimum precision of 0.0001 grams. Records are kept of daily calibration checks for the balances in use. Working weights are used in these checks. The balances are annually certified by an outside source and the certifications are on file with the QA/QCO.

Balances, unless otherwise indicated by method specific SOPs, will be checked each day of use with at least two weights that will bracket the working range of the balance for the day. Daily balance checks will be done using working weights that are calibrated annually against Class S weights. Class S weights are calibrated by an external provider as required. The Class S weights are used once a year, or more frequently if required, to assign values to the Working Weights. During the daily balance checks, the working weights are compared to their assigned values and must pass in order to validate the calibration of the balance. The assigned values, as well as the daily checks, for the working weights are recorded in the balance logbook for each balance.

**Instrument Calibration**

An instrument calibration is the relationship between the known concentrations of a set of calibration standards introduced into an analytical instrument and the measured response they produce. Calibration curve standards are a prepared series of aliquots at various known concentration levels from a primary source reference standard. Specific mathematical types of calibration techniques are outlined in SW-846 8000B and/or 8000C. The entire initial calibration must be performed prior to sample analyses.

The lowest standard in the calibration curve must be at or below the required reporting limit.

Refer to the current SOP to determine the minimum requirement for calibration points.

Most compounds tend to be linear and a linear approach should be favored when linearity is suggested by the calibration data. Non-linear calibration should be considered only when a linear approach cannot be applied. It is not acceptable to use an alternate calibration procedure when a compound fails to perform in the usual manner. When this occurs, it is indicative of instrument issues or operator error.

If a non-linear calibration curve fit is employed, a minimum of six calibration levels must be used for second-order (quadratic) curves.

When more than 5 levels of standards are analyzed in anticipation of using second-order calibration curves, all calibration points MUST be used regardless of the calibration option

employed. The highest or lowest calibration point may be excluded for the purpose of narrowing the calibration range and meeting the requirements for a specific calibration option. Otherwise, unjustified exclusion of calibration data is expressly forbidden.

Analytical methods vary in QC acceptance criteria. HEAL follows the method specific guidelines for QC acceptance. The specific acceptance criteria are outlined in the analytical methods and their corresponding SOPs.

**pH Meter**

The pH meter measures to a precision of 0.01 pH units. The pH calibration logbook contains the calibration before each use, or each day of use, if used more than once per day. It is calibrated using a minimum of 3 certified buffers. Also available with the pH meter is a magnetic stirrer with a temperature sensor. See the current pH SOP (SM4500 H+ B) for specific details regarding calibration of the pH probe.

**Other Analytical Instrumentation and Equipment**

The conductivity probe is calibrated as needed and checked daily when in use.

Eppendorf (or equivalent brands) pipettes are checked gravimetrically prior to use.

**Standards**

All of the source reference standards used are ordered from a reliable commercial vendor. A Certificate of Analysis (CoA), which verifies the quality of the standard, accompanies the standards from the vendor. The Certificates of Analysis are dated and stored on file by the Technical Directors or their designee. These standards are traceable to the National Institute of Standards (NIST). When salts are purchased and used as standards the certificate of purity must be obtained from the vendor and filed with the CoAs.

All standard solutions, calibration curve preparations, and all other quality control solutions are labeled in a manner that can be traced back to the original source reference standard. All source reference standards are entered into the LIMS with an appropriate description of the standard. Dilutions of the source reference standard (or any mixes of the source standards) are fully tracked in the LIMS. Standards are labeled with the date opened for use and with an expiration date.

As part of the quality assurance procedures at HEAL, analysts strictly adhere to manufacturer recommendations for storage times/expiration dates and policies of analytical standards and quality control solutions.

**Reagents**

HEAL ensures that the reagents used are of acceptable quality for their intended purpose. This is accomplished by ordering high quality reagents and adhering to good laboratory practices so as to minimize contamination or chemical degradation. All reagents must meet any specifications noted in the analytical method. Refer to the current Purchase of Consumables SOP for details on how this is accomplished and documented.

Upon receipt, all reagents are assigned a separate ID number, and logged into the LIMS. All reagents shall be labeled with the date received into the laboratory and again with the date opened for use. Recommended shelf life, as defined by the manufacturer, shall be documented and controlled. Dilutions or solutions prepared shall be clearly labeled, dated, and initialed. These solutions are traceable back to their primary reagents and do not extend beyond the expiration date listed for the primary reagent.

All gases used with an instrument shall meet specifications of the manufacturer. All safety requirements that relate to maximum and/or minimum allowed pressure, fitting types, and leak test frequency, shall be followed. When a new tank of gas is placed in use, it shall be checked for leaks and the date put in use will be written in the instrument maintenance logbook.

HEAL continuously monitors the quality of the reagent water and provides the necessary indicators for maintenance of the purification systems in order to assure that the quality of laboratory reagent water meets established criteria for all analytical methods. The majority of HEAL methods utilize medium quality deionized reagent water maintained at a resistivity greater than 1MΩ in accordance with SM1080.

Reagent blank samples are also analyzed to ensure that no contamination is present at detectable levels. The frequency of reagent blank analysis is typically the same as calibration verification samples. Refrigerator storage blanks are stored in the volatiles refrigerator for a period of one week and analyzed and replaced once a week.

## 8.0 Maintenance

Maintenance logbooks are kept for each major instrument and all support equipment in order to document all repair and maintenance. In the front of the logbook, the following information is included:

Unique Name of the Item or Equipment
Manufacturer
Type of Instrument
Model Number
Serial Number
Date Received and Date Placed into Service
Location of Instrument
Condition of Instrument Upon Receipt

For routine maintenance, the following information shall be included in the log:

Maintenance Date
Maintenance Description
Maintenance Performed by Initials

A manufacturer service agreement (or equivalent) covers most major instrumentation to assure prompt and reliable response to maintenance needs beyond HEAL instrument operator capabilities.

Refer to the current Maintenance and Troubleshooting SOP for each section in the laboratory for further information.

## 9.0 Data Integrity

For HEAL's policy on ethics and data integrity, see section 3.0 of this document. Upon being hired, and annually thereafter, all employees at HEAL undergo documented data integrity training. All new employees sign an Ethics and Data Integrity Agreement, documenting their understanding of the high standards of integrity required at HEAL and outlining their responsibilities in regards to ethics and data integrity. See the current Document Control Logbook for a copy of this agreement.

In instances of ethical concern, analysts are required to report the known or suspected concern to their Technical Director, the Laboratory Manager, or the QA/QCO. This will be done in a confidential and receptive environment, allowing all employees to privately discuss ethical issues or report items of ethical concern.

Once reported and documented, the ethical concern will be immediately elevated to the Laboratory Manager and the need for an investigation, analyst remediation, or termination will be determined on a case-by-case basis.

All reported instances of ethical concern will be thoroughly documented and handled in a manner sufficient to rectify any breaches in data integrity with an emphasis on preventing similar incidences from happening in the future.

## 10.0 Quality Control

### Internal Quality Control Checks

HEAL utilizes various internal quality control checks, including duplicates, matrix spikes, matrix spike duplicates, method blanks, laboratory control spikes, laboratory control spike duplicates, surrogates, internal standards, calibration standards, quality control charts, proficiency tests and calculated measurement uncertainty.

Refer to the current method SOP to determine the frequency and requirements of all quality controls. In the event that the frequency of analysis is not indicated in the method specific SOP, duplicate samples, laboratory control spikes (LCS), Method Blanks (MB), and matrix spikes and matrix spike duplicates (MS/MSD) are analyzed for every batch of twenty samples.

When sample volume is limited on a test that requires an MS/MSD an LCSD shall be analyzed to demonstrate precision and accuracy and when possible a sample duplicate will be analyzed.

Duplicates are identical tests repeated for the same sample or matrix spike in order to determine the precision of the test method. A Relative Percent Difference (RPD) is calculated as a measure of this precision. Unless indicated in the SOP, the default acceptance limit is </= 20%.

Matrix Spikes and Matrix Spike Duplicates are spiked samples (MS/MSD) that are evaluated with a known added quantity of a target compound. This is to help determine the accuracy of the analyses and to determine the matrix effects on analyte recovery. A percent recovery is calculated to assess the quality of the accuracy. In the event that the acceptance criteria is not outlined in the SOP, a default limits of 70-130% will be utilized. When an MSD is employed an RPD is calculated and when not indicated in the SOP shall be acceptable at </= 20%.

When appropriate for the method, a Method Blank should be analyzed with each batch of samples processed to assess contamination levels in the laboratory. MBs consist of all the reagents measured and treated as they are with samples, except without the samples. This enables the laboratory to ensure clean reagents and procedures. Guidelines should be in place for accepting or rejecting data based on the level of contamination in the blank. In the event that these guidelines are not dictated by the SOP or in client specific work plans, the MB should be less than the MDL reported for the analyte being reported.
A Laboratory Control Spike and Laboratory Control Spike Duplicate (LCS/LCSD) are reagent blanks, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes. It is generally used to establish intra-laboratory or analyst-specific precision and bias or to assess the performance of all or a portion of the measurement system. Guidelines are outlined in each

SOP for the frequency and pass fail requirements for LCS and LCSDs. These limits can be set utilizing control charts as discussed below.

Surrogates are utilized when dictated by method and are substances with properties that mimic the analytes of interest. The surrogate is an analyte that is unlikely to be found in environmental samples. Refer to the appropriate Method and SOP for guidelines on pass/fail requirements for surrogates.

Internal Standards are utilized when dictated by the method and are known amounts of standard added to a test portion of a sample as a reference for evaluating and controlling the precision and bias of the applied analytical method. Refer to the appropriate Method and SOP for guidelines on pass/fail requirements for Internal Standards.

Proficiency Test (PT) Samples are samples provided by an unbiased third party. They are typically analyzed twice a year, between five and seven months apart, or at any other interval as defined in the method SOP. They contain a pre-determined concentration of the target compound, which is unknown to HEAL. HEAL's management and all analysts shall ensure that all PT samples are handled in the same manner as real environmental samples utilizing the same staff, methods, procedures, equipment, facilities and frequency of analysis as used for routine analysis of that analyte. When analyzing a PT, HEAL shall employ the same calibration, laboratory quality control and acceptance criteria, sequence of analytical steps, number of replicates and other procedures as used when analyzing routine samples. PT results are reported as normal samples, within the working range of the associated calibration curve. In the event an analyte concentration is less than the PQL, the result shall be reported as less than the PQL.

With regards to analyzing PT Samples HEAL shall not send any PT sample, or portion of a PT sample, to another laboratory for any analysis for which we seek accreditation, or are accredited. HEAL shall not knowingly receive any PT sample or portion of a PT sample from another laboratory for any analysis for which the sending laboratory seeks accreditation, or is accredited. Laboratory management or staff will not communicate with any individual at another laboratory concerning the PT sample. Laboratory management or staff shall not attempt to obtain the assigned value of any PT sample from the PT Provider.

Upon receiving a Not Acceptable PT result for any analyte, a root cause analysis is conducted and the cause of the failure determined and corrected. As defined by TNI, two out of the past three PTs must be acceptable to maintain accreditation for any given analyte. If this requirement is not met, a successful history will be reestablished by the analysis of an additional PT sample. For accredited tests, the PT provider will be notified, when the PT is for corrective action purposes. The analysis dates of successive PT samples for the same TNI accredited analyte shall be at least fifteen days apart.

Calibration standards are standards run to calibrate. Once the calibration is established the same standards can be analyzed as Continuing Calibration Verifications (CCV), used to confirm the consistency of the instrumentation. Calibration standards can be utilized at the beginning and end of each batch, or more frequently as required. Typically Continuing

Calibration Blanks (CCB) are run in conjunction with CCVs. Refer to the current method SOP for frequency and pass/fail requirements of CCVs and CCBs.

Control Limits are limits of acceptable ranges of the values of quality control checks. The control limits approximate a 99% confidence interval around the mean recovery. Any matrix spike, surrogate, or LCS results outside of the control limits require further evaluation and assessment. This should begin with the comparison of the results from the samples or matrix spike with the LCS results. If the recoveries of the analytes in the LCS are outside of the control limits, then the problem may lie with the application of the extraction, with cleanup procedures, or with the chromatographic procedure. Once the problem has been identified and addressed, corrective action may include reanalysis of samples or re-extraction followed by reanalysis. When the LCS results are within the control limits, the issue may be related to the sample matrix or to the use of an inappropriate extraction, cleanup, and/or determinative method for the matrix. If the results are to be used for regulatory compliance monitoring, then steps must be taken to demonstrate that the analytes of concern can be determined in the sample matrix at the levels of interest. Data generated with laboratory control samples that fall outside of the established control limits are judged to be generated during an "out-of-control" situation. These data are considered suspect and shall be repeated or reported with qualifiers.

Control limits are to be updated only by Technical Directors, Section Supervisors or the Quality Assurance Officer. Control limits should be established and updated according to the requirements of the method being utilized. When the method does not specify, and control limits are to be generated or updated for a test, the following guidelines shall be utilized.

Limits should typically be generated utilizing the most recent 20-40 data values. In order to obtain an even distribution across multiple instruments and to include more than a single day's worth of data, surrogate limits should be generated using around 100 data values. The data values used shall not reuse values that were included in the previous Control Limit update. The data values shall also be reviewed by the LIMS for any Grubbs Outliers, and if identified, the outliers must be removed prior to generating new limits. The results used to update control limits should meet all other QC criteria associated with the determinative method. For example, MS/MSD recoveries from a GC/MS procedure should be generated from samples analyzed after a valid tune and a valid initial calibration that includes all analytes of interest. Additionally, no analyte should be reported when it is beyond the working range of the calibration currently in use. MS/MSD and surrogate limits should be generated using the same set of extraction, cleanup, and analysis procedures.

All generated limits should be evaluated for appropriateness. Where limits have been established for MS/MSD samples, the LCS/LCSD limits should fall within those limits, as the LCS/LCSD are prepared in a clean matrix. Surrogate limits should be updated using all sample types and should be evaluated to ensure that all instruments as well as a reasonable dispersion across days are represented by the data. LCS/LCSD recovery limits should be evaluated to verify that they are neither inappropriately wide nor unreasonably tight. The default LCS/LCSD acceptance limits of 70-130% and RPD of 20% (or those limits

specified by the method for LCS/LCSD and/or CCV acceptability), should be used to help make this evaluation. Technical directors may choose to use warning limits when they feel their generated limits are too wide, or default LCS limits when they feel their limits have become arbitrarily tight.

Once new Control Limits have been established and updated in the LIMS, the Control Charts shall be printed and reviewed by the appropriate section supervisor and primary analyst performing the analysis for possible trends and compared to the previous Control Charts. The technical director initials the control charts, indicating that they have been reviewed and that the updated Limits have been determined to be accurate and appropriate. Any manual alterations to the limits will be documented and justified on the printed control chart. These initialed charts are then filed in the QA/QCO office.

Once established, control limits should be reviewed after every 20-30 data values and updated at least every six months, provided that there are sufficient points to do so. The limits used to evaluate results shall be those in place at the time that the sample was analyzed. Once limits are updated, those limits apply to all subsequent analyses.

When updating surrogate control limits, all data, regardless of sample/QC type, shall be updated together and assigned one set of limits for the same method/matrix.

In the event that there are insufficient data points to update limits that are over a year old, the default limits, as established in the method or SOP, shall be re-instated. Refer to the requirements in SW-846 method 8000B and 8000C for further guidance on generating control limits.

Calculated Measurement Uncertainty is calculated annually using LCSs in order to determine the laboratory specific uncertainty associated with each test method. These uncertainty values are available to our clients upon request and are utilized as a trending tool internally to determine the effectiveness of new variables introduced into the procedure over time.

**Client Requested QC**

Occasionally certain clients will require QC that is not defined by or covered in the SOPs. These special requests will be issued to all analysts and data reviewers in writing and the analysts and data reviewers will be provided with guidance on how to properly document the client requested deviation/QC in their preparation and analytical batches.

## Precision, Accuracy, Detection Levels

### Precision

The laboratory uses sample duplicates, laboratory control spike duplicates, and matrix spike duplicates to assess precision in terms of relative percent difference

(RPD). HEAL requires the RPD to fall within the 99% confidence interval of established control charts or an RPD of less than 20% if control charts are not available. RPD's greater than these limits are considered out-of-control and require an appropriate response.

$$RPD = \frac{2 \times (\text{Sample Result} - \text{Duplicate Result})}{(\text{Sample Result} + \text{Duplicate Result})} \times 100$$

**Accuracy**

The accuracy of an analysis refers to the difference between the calculated value and the actual value of a measurement. The accuracy of a laboratory result is evaluated by comparing the measured amount of QC reference material recovered from a sample and the known amount added. Control limits can be established for each analytical method and sample matrix. Recoveries are assessed to determine the method efficiency and/or the matrix effect.

Analytical accuracy is expressed as the Percent Recovery (%R) of an analyte or parameter. A known amount of analyte is added to an environmental sample before the sample is prepared and subsequently analyzed. The equation used to calculate percent recovery is:

$$\%Recovery = \{(concentration^* recovered)/(concentration^* added)\} \times 100$$

*or amount

HEAL requires that the Percent Recovery to fall within the 99 % confidence interval of established control limits. A value that falls outside of the confidence interval requires a warning and process evaluation. The confidence intervals are calculated by determining the mean and sample standard deviation. If control limits are not available, the range of 80 to 120% is used unless the specific method dictates otherwise. Percent Recoveries outside of this range mandate additional action such as analyses by Method of Standard Additions, additional sample preparation(s) where applicable, method changes, and out-of-control action or data qualification.

**Detection Limit**

Current practices at HEAL define the Detection Limit (DL) as the smallest amount that can be detected above the baseline noise in a procedure within a stated confidence level.

HEAL presently utilizes an Instrument Detection Limit (IDL), a Method Detection Limit (MDL), and a Practical Quantitation Limit (PQL). The relationship between these levels is approximately

IDL: MDL: PQL = 1:5:5.

The IDL is a measure of the sensitivity of an analytical instrument. The IDL is the amount which, when injected, produces a detectable signal in 99% of the analyses at that concentration. An IDL can be considered the minimum level of analyte concentration that is detectable above random baseline noise.

The MDL is a measure of the sensitivity of an analytical method. MDL studies are required annually for each quality system matrix, technology and analyte, unless indicated otherwise in the referenced method. An MDL determination (as required in 40CFR part 136 Appendix B) consists of replicate spiked samples carried through all necessary preparation steps. The spike concentration is three times the standard deviation of three replicates of spikes. At least seven replicates are spiked and analyzed and their standard deviation(s) calculated. Routine variability is critical in passing the 10 times rule and is best achieved by running the MDLs over different days and when possible over several calibration events. Standard Methods and those methods used for drinking water analysis must have MDL studies that are performed over a period of at least three days in order to include day to day variations. The method detection limit (MDL) can be calculated using the standard deviation according to the formula:

$$MDL = s * t\ (99\%),$$

where t (99%) is the Student's t-value for the 99% confidence interval. The t-value depends on the number of trials used in calculating the sample standard deviation, so choose the appropriate value according to the number of trials.

| Number of Trials | t(99%) |
|---|---|
| 6 | 3.36 |
| 7 | 3.14 |
| 8 | 3.00 |
| 9 | 2.90 |

The calculated MDL must not be less than 10 times the spiked amount or the study must be performed again with a lower concentration.

Where there are multiple MDL values for the same test method in the LIMS the highest MDL value is utilized.

The PQL is significant because different laboratories can produce different MDLs although they may employ the same analytical procedures, instruments and sample matrices. The PQL is about two to five times the MDL and represents a practical, and routinely achievable, reporting level with a good certainty that the reported value is reliable. It is often determined by regulatory limits. The reported PQL for a sample is dependent on the dilution factor utilized during sample analysis.

In the event that an analyte will not be reported less than the PQL, an MDL study is not required and a PQL check shall be done, at least annually, in place of the MDL study. The PQL check shall consist of a QC sample spiked at or below the PQL. All sample-processing and analysis steps of the analytical method shall be included in the PQL check and shall be done for each quality system matrix, technology, and analyte. A successful check is one where the recovery of each analyte is within the established method acceptance criteria. When this criterion is not defined by the method or SOP, a default limit of +/-50% shall be utilized.

## Quality Control Parameter Calculations

### Mean

The sample mean is also known as the arithmetic average. It can be calculated by adding all of the appropriate values together, and dividing this sum by the number of values.

$$\text{Average} = (\Sigma x_i) / n$$

$x_i$ = the value x in the $i^{th}$ trial
n = the number of trials

### Standard Deviation

The sample standard deviation, represented by s, is a measure of dispersion. The dispersion is considered to be the difference between the average and each of the values $x_i$. The variance, $s^2$, can be calculated by summing the squares of the differences and dividing by the number of differences. The sample standard deviation, s, can be found by taking the square root of the variance.

$$\text{Standard deviation} = s = [\Sigma (x_i - \text{average})^2 / (n - 1)]^{1/2}$$

### Percent Recovery (LCS and LCSD)

$$\text{Percent Recovery} = \frac{\text{(Spike Sample Result)}}{\text{(Spike Added)}} \times 100$$

### Percent Recovery (MS, MSD)

$$\text{Percent Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{(\text{Spike Added})} \times 100$$

**Control Limits**

Control Limits are calculated by the LIMS using the average percent recovery (x), and the standard deviation (s).

$$\text{Upper Control Limit} = x + 3s$$
$$\text{Lower Control Limit} = x - 3s$$

These control limits approximate a 99% confidence interval around the mean recovery.

**RPD (Relative Percent Difference)**

Analytical precision is expressed as a percentage of the difference between the results of duplicate samples for a given analyst. Relative percent difference (RPD) is calculated as follows:

$$\text{RPD} = 2 \times \frac{(\text{Sample Result} - \text{Duplicate Result})}{(\text{Sample Result} + \text{Duplicate Result})} \times 100$$

**Uncertainty Measurements**

Uncertainty, as defined by ISO, is the parameter associated with the result of a measurement that characterizes the dispersion of the values that could reasonably be attributed to the measurement. Ultimately, uncertainty measurements are used to state how good a test result is and to allow the end user of the data to properly interpret their reported data. All procedures allow for some uncertainty. For most analyses, the components and estimates of uncertainty are reduced by following well-established test methods. To further reduce uncertainty, results generally are not reported below the lowest calibration point (PQL) or above the highest calibration point (UQL). Understanding that there are many influential quantities affecting a measurement result, so many in fact that it is impossible to identify all of them, HEAL calculates measurement uncertainty at least annually using LCSs. These estimations of measurement uncertainty are kept on file in the method folders in the QA/QC office.

Measurement Uncertainty contributors are those that may be determined statistically. These shall be generated by estimating the overall uncertainty in the entire analytical

process by measuring the dispersion of values obtained from laboratory control samples over time. At least 20 of the most recent LCS data points are gathered. The standard deviation(s) is calculated using these LCS data points. Since it can be assumed that the possible estimated values of the spikes are approximately normally distributed with approximate standard deviation(s), the unknown value of the spike is believed to lie in 95% confidence interval, corresponding to an uncertainty range of +/- 2(s).

Calculate standard deviation (s) and 95% confidence interval according to the following formulae:

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{(n-1)}}$$

Where: s = standard deviation
x = number in series
$\bar{x}$ = calculated mean of series
$n$ = number of samples taken

$$95\%\ confidence = 2 \times s$$

Example: Assuming that after gathering 20 of the most recent LCS results for Bromide, we have calculated the standard deviations of the values and achieved a result of 0.0326, our measurement of uncertainty for Bromide (at 95% confidence = 2 x s) is 0.0652.

### Total Nitrogen

Total nitrogen is calculated as follows:

Total Nitrogen = TKN + $NO_2$ + $NO_3$

### Langelier Saturation Index

The Langelier Saturation Index (LSI) is calculated as follows:

Solids Factor (SF) =(Log10[TDS] - 1) / 10
Ca Hardness Factor (HF) = Log10([Ca] x 2.497) - 0.4
Alkalinity Factor (AF) = Log10[Alkalinity]
Temp. Factor (TF) = -13.12 x Log10(°C + 273) + 34.55
pHs (pH @ saturation) =(9.3 + SF + TF) - (HF + AF)
LSI = pH - $pH_s$

**Calibration Calculations**

1. Response Factor or Calibration Factor:

$RF = ((A_x)(C_{is}))/((A_{is})(C_x))$ $CF=(A_x)/(C_x)$

a. Average RF or CF

$RF_{AVE} = \Sigma RF_i / n$

b. Standard Deviation

$s = SQRT \{ [ \Sigma (RF_i - RF_{AVE} )^2 ] / (n-1) \}$

c. Relative Standard Deviation

$RSD = s / RF_{AVE}$

Where:
$A_x$ = Area of the compound
$C_x$ = Concentration of the compound
$A_{is}$ = Area of the internal standard
$C_{is}$ = Concentration of the internal standard
n = number of pairs of data
$RF_i$ = Response Factor (or other determined value)
$RF_{AVE}$ = Average of all the response factors
$\Sigma$ = the sum of all the individual values

2. Linear Regression

$y=mx+b$

a. Slope (m)

$m =( n\Sigma x_i y_i - (n\Sigma x_i)*(n\Sigma y_i) ) / (n\Sigma x_i^2 - (\Sigma x_i)^2)$

b. Intercept (b)

$b = y_{AVE} - m*(x_{AVE})$

c. Correlation Coefficient (cc)

$CC (r) =\{ \Sigma((x_i-x_{ave})*(y_i-y_{ave})) \} / \{ SQRT((\Sigma(x_i-x_{ave})^2)*(\Sigma(y_i-y_{ave})^2)) \}$

Or

$$CC\ (r) = [(\Sigma w * \Sigma wxy) - (\Sigma wx * \Sigma wy)] / (sqrt( ( [(\Sigma w * \Sigma wx^2) - (\Sigma wx * \Sigma wx)] * [(\Sigma w * \Sigma wy^2) - (\Sigma wy * \Sigma wy)])))]$$

d. Coefficient of Determination

$$COD\ (r^2) = CC*CC$$

Where:
$y$ = Response (Area) Ratio $A_x/A_{is}$
$x$ = Concentration Ratio $C_x/C_{is}$
$m$ = slope
$b$ = intercept
$n$ = number of replicate x,y pairs
$x_i$ = individual values for independent variable
$y_i$ = individual values for dependent variable
$\Sigma$ = the sum of all the individual values
$x_{ave}$ = average of the x values
$y_{ave}$ = average of the y values
$w$ = weighting factor, for equal weighting w=1

3. Quadratic Regression

$$y = ax^2 + bx + c$$

a. Coefficient of Determination

$$COD\ (r^2) = ( \Sigma(y_i-y_{ave})^2 - \{[(n-1)/(n-p)] * [\Sigma(y_i-Y_i)^2]\} ) / \Sigma(y_i-y_{ave})^2$$

Where:
$y$ = Response (Area) Ratio $A_x/A_{is}$
$x$ = Concentration Ratio $C_x/C_{is}$
$a$ = $x^2$ coefficient
$b$ = x coefficient
$c$ = intercept
$y_i$ = individual values for each dependent variable
$x_i$ = individual values for each independent variable
$y_{ave}$ = average of the y values
$n$ = number of pairs of data
$p$ = number of parameters in the polynomial equation (I.e., 3 for third order, 2 for second order)
$Yi = ((2*a*(C_x/C_{is})\text{^}2)-b\text{^}2+b+(4*a*c))/(4a)$

b. Coefficients (a,b,c) of a Quadratic Regression

$$a = S_{(x2y)}S_{(xx)}-S_{(xy)}S_{(xx2)} / S_{(xx)}S_{(x2x2)}-[S_{(xx2)}]^2$$

$$b = S_{(xy)}S_{(x2x2)}-S_{(x2y)}S_{(xx2)} / S_{(xx)}S_{(x2x2)}-[S_{(xx2)}]^2$$

$$c = [(\Sigma yw)/n] - b*[(\Sigma xw)/n] - a*[\Sigma(x^2w)/n]$$

Where:
n = number of replicate x,y pairs
x = x values
y = y values
$w = S^{-2} / (\Sigma S^{-2}/n)$
$S_{(xx)} = (\Sigma x^2w) - [(\Sigma xw)^2 / n]$
$S_{(xy)} = (\Sigma xyw) - [(\Sigma xw)*(\Sigma yw) / n]$
$S_{(xx2)} = (\Sigma x^3w) - [(\Sigma xw)*(\Sigma x^2w) / n]$
$S_{(x2y)} = (\Sigma x^2yw) - [(\Sigma x^2w)*(\Sigma yw) / n]$
$S_{(x2x2)} = (\Sigma x^4w) - [(\Sigma x^2w)^2 / n]$
Or If unweighted calibration, w=1
S(xx) = (Sx2) - [(Sx)2 / n]
S(xy) = (Sxy) - [(Sx)*(Sy) / n]
S(xx2) = (Sx3) - [(Sx)*(Sx2) / n]
S(x2y) = (Sx2y) - [(Sx2)*(Sy) / n]
S(x2x2) = (Sx4) - [(Sx2)2 / n]

## Weighting

Weighting of 1/x or $1/x^2$ is permissible for linear calibrations. Weighting shall not be employed for quadratic calibrations. When weighting, use the above equations by substituting x for 1/x or $1/x^2$.

## Concentration Calculations

**On-Column Concentration for Average RRF Calibration using Internal Standard**

On-Column Concentration $C_x = ((A_x)(C_{is}))/((A_{is})(RF_{AVE}))$

**On-Column Concentration for Average CF Calibration using External Standard**

On-Column Concentration $C_x = (A_x)/(CF_{AVE})$

**On-Column Concentration for Linear Calibration**

If determining an external standard, then exclude the $A_{is}$ and $C_{is}$ for internal standards
On-Column Concentration $C_x$ = ((Absolute{[$(A_x)/(A_{is})$] - b})/m) * $C_{is}$

Where: m = slope
b = intercept
$A_x$ = Area of the Sample
$C_{is}$ = Concentration of the Internal Standard
$A_{is}$ = Area of the Internal Standard

**On-Column Concentration for Quadratic Calibration**

If determining an external standard, then exclude the $A_{is}$ and $C_{is}$ for internal standards

On-Column Concentration $=[(+SQRT(b^2-(4*a*(c-y)))-b)/(2*a)] * C_{is}$

Where: $a = x^2$ coefficient
b = x coefficient
c = intercept
y = Area Ratio = $A_x/A_{is}$
$C_{is}$ = Concentration of the Internal Standard

**Final Concentration (Wet Weight)**

$$\text{Concentration for Extracted Samples} = \frac{(\text{On-Column Conc})(\text{Dilution})(\text{Final Volume})}{(\text{Initial Amount})(\text{Injection Volume})}$$

$$\text{Concentration for Purged Samples} = \frac{(\text{On-Column Conc})(\text{Purged Amount})(\text{Dilution})}{(\text{Purged Amount})}$$

**Dry Weight Concentration**

$$\text{Dry Weight Concentration} = \frac{\text{Final Concentration Wet Weight} * 100}{\%\ \text{Solids}}$$

## Percent Difference

$$\%\ \text{Difference} = \frac{\text{Absolute(Continuing Calibration RRF - Average RRF)}}{\text{Average RRF}} * 100$$

## Percent Drift

$$\%\ \text{Drift} = \frac{\text{Absolute(Calculated Concentration - Theoretical Concentration)}}{\text{Theoretical Concentration}} * 100$$

## Dilution Factor

Dilution Factor =(Volume of Solvent + Solute) / Volume of Solute

## Relative Retention Time

RRT =RT of Compound / RT of ISTD

## Breakdown Percent

$$\text{Breakdown} = \frac{\text{Area of DDD + Area of DDE}}{\text{Average (DDT, DDE and DDD)}}$$

-or-

$$\frac{\text{Area of Endrin Ketone + Area of Endrin Aldehyde}}{\text{Average (Endrin, Endrin Ketone, Endrin Aldehyde)}}$$

## 11.0 Data Reduction, Validation, Reporting, and Record Keeping

All data reported must be of the highest possible accuracy and quality. During the processes of data reduction, validation, and report generation, all work is thoroughly checked to insure that error is minimized.

### Data Reduction

The analyst who generated the data usually performs the data reduction. The calculations include evaluation of surrogate recoveries (where applicable), and other miscellaneous calculations related to the sample quantitation.

If the results are computer generated, then the formulas must be confirmed by hand calculations, at minimum, one per batch.

See the current Data Validation SOP for details regarding data reduction.

### Validation

A senior analyst, most often the section supervisor, validates the data. All data undergoes peer review. If an error is detected, it is brought to the analyst's attention so that he or she can rectify the error, and perform further checks to ensure that all data for that batch is sound. Previous and/or common mistakes are stringently monitored throughout the validation process. Data is reported using appropriate significant figure criteria. In most cases, two significant digits are utilized, but three significant digits can be used in QC calculations. Significant digits are not rounded until after the last step of a sample calculation. All final reports undergo a review by the laboratory manager, the project manager, or their designee, to provide a logical review of all results before they are released to the client.

If data is to be manually transferred between media, the transcribed data is checked by a peer. This includes data typing, computer data entry, chromatographic data transfer, data table inclusion to a cover letter, or when data results are combined with other data fields.

All hand-written data from run logs, analytical standard logbooks, hand-entered data logbooks, or on instrument-generated chromatograms, are systematically archived should the need for future retrieval arise.

See the current Data Validation SOP for details regarding data validation.

## Reports and Records

All records at HEAL are retained and maintained through the procedures outlined in the most recent version of the Records Control SOP.

Sample reports are compiled by the Laboratory Information Management System (LIMS). Most data is transferred directly from the instruments to the LIMS. After being processed by the analyst and reviewed by a data reviewer, final reports are approved and signed by the senior laboratory management. A comparative analysis of the data is performed at this point. For example, if TKN and NH3 are analyzed on the same sample, the NH3 result should never be greater than the TKN result. Lab results and reports are released only to appropriately designated individuals. Release of the data can be by fax, email, electronic deliverables, or mailed hard copy.

When a project is completed, the final report, chain of custody, any relevant supporting data, and the quality assurance/control worksheets are scanned as a .pdf file onto the main server. Original client folders are kept on file and are arranged by project number. Additionally, all electronic data is backed up routinely on the HEAL main server. The backup includes raw data, chromatograms, and report documents. Hard copies of chromatograms are stored separately according to the instrument and the analysis date. All records and analytical data reports are retained in a secure location as permanent records for a minimum period of five years (unless specified otherwise in a client contract). Access to archived information shall be documented with an access log. Access to archived electronic reports and data will be password protected. In the event that HEAL transfers ownership or terminates business practices, complete records will be maintained or transferred according to the client's instructions.

After issuance, the original report shall remain unchanged. If a correction to the report is necessary, then an additional document shall be issued. This document shall have a title of "Addendum to Test Report or Correction to Original Report", or equivalent. Demonstration of original report integrity comes in two forms. First, the report date is included on each page of the final report. Second, each page is numbered in sequential order, making the addition or omission of any data page(s) readily detectable.

## 12.0 Corrective Action

Refer to the most recent version of the Data Validation SOP for the procedure utilized in filling out a Corrective Action Report. A blank copy of the corrective action report is available in the current Document Control Logbook.

The limits that have been defined for data acceptability also form the basis for corrective action initiation. Initiation of corrective action occurs when the data generated from continuing calibration standard, sample surrogate recovery, laboratory control spike, matrix spike, or sample duplicates exceed acceptance criteria. If corrective action is necessary, the analyst or the section supervisor will coordinate to take the following guidelines into consideration in order to determine and correct the measurement system deficiency:

Check all calculations and data measurements systems (Calibrations, reagents, instrument performance checks, etc.).

Assure that proper procedures were followed.

Unforeseen problems that arise during sample preparation and/or sample analysis that lead to treating a sample differently from documented procedures shall be documented with a corrective action report. The section supervisor and laboratory manager shall be made aware of the problem at the time of the occurrence. See the appropriate SOP regarding departures from documented procedures.

Continuing calibration standards below acceptance criteria can not be used for reporting analytical data unless method specific criteria states otherwise.

Continuing calibration standards above acceptance criteria can be used to report data as long as the failure is isolated to a single standard and the corresponding samples are non-detect for the failing analyte.

Samples with non-compliant surrogate recoveries should be reanalyzed, unless deemed un-necessary by the supervisor for matrix, historical data, or other analysis-related anomalies.

Laboratory and Matrix Spike acceptance criteria vary significantly depending on method and matrix. Analysts and supervisors meet and discuss appropriate corrective action measures as spike failures occur.

Sample duplicates with RPD values outside control limits require supervisor evaluation and possible reanalysis.

A second mechanism for initiation of corrective action is that resulting from Quality Assurance performance audits, system audits, inter- and intra-laboratory comparison studies. Corrective Actions initiated through this mechanism will be monitored and coordinated by the laboratory QA/QCO.

All corrective action forms are entered in the LIMS and included with the raw data for peer review, signed by the technical director of the section and included in the case narrative to the client whose samples were affected. All Corrective action forms in the LIMS are reviewed by the QA/QCO.

## 13.0 Quality Assurance Audits, Reports and Complaints

### Internal/External Systems' Audits, Performance Evaluations, and Complaints

Several procedures are used to assess the effectiveness of the quality control system. One of these methods includes internal performance evaluations, which are conducted by the use of control samples, replicate measurements, and control charts. External performance audits, which are conducted by the use of inter-laboratory checks, such as participation in laboratory evaluation programs and performance evaluation samples available from a NELAC-accredited Proficiency Standard Vendor, are another method.

Proficiency samples will be obtained twice per year from an appropriate vendor for all tests and matrices for which we are accredited and for which PTs are available. HEAL participates in soil, waste water, drinking water, and underground storage tank PT studies. Copies of results are available upon request. HEAL's management and all analysts shall ensure that all PT samples are handled in the same manner as real environmental samples utilizing the same staff, methods, procedures, equipment, facilities, and frequency of analysis as used for routine analysis of that analyte. When analyzing a PT, HEAL shall employ the same calibration, laboratory quality control and acceptance criteria, sequence of analytical steps, number of replicates, and other procedures as used when analyzing routine samples.

With regards to analyzing PT Samples, HEAL shall not send any PT sample, or portion of a PT sample, to another laboratory for any analysis for which we seek accreditation, or are accredited. HEAL shall not knowingly receive any PT sample or portion of a PT sample from another laboratory for any analysis for which the sending laboratory seeks accreditation, or is accredited. Laboratory management or staff will not communicate with any individual at another laboratory concerning the PT sample. Laboratory management or staff shall not attempt to obtain the assigned value of any PT sample from the PT Provider.

Internal Audits are performed annually by the QA/QCO in accordance with the current Internal Audit SOP. The system audit consists of a qualitative inspection of the QA system in the laboratory and an assessment of the adequacy of the physical facilities for sampling, calibration, and measurement. This audit includes a careful evaluation and review of laboratory quality control procedures. Internal audits are performed using the guidelines outlined below, which include, but are not limited to:

1. Review of staff qualifications, demonstration of capability, and personnel training programs
2. Storage and handling of reagents, standards, and samples
3. Standard preparation logbook and LIMS procedures
4. Extraction logbooks
5. Raw data logbooks
6. Analytical logbooks or batch printouts and instrument maintenance logbooks
7. Data review procedures

8. Corrective action procedures
9. Review of data packages, which is performed regularly by the lab manager/QA Officer.

The QA/QCO will conduct these audits on an annual basis.

**Management Reviews**

HEAL management shall periodically, and at least annually, conduct a review of the laboratory's quality system and environmental testing activities to ensure their continuing suitability and effectiveness, and to introduce necessary changes or improvements. The review shall take account of:

1. the suitability and implementation of policies and procedures
2. reports from managerial and supervisory personnel
3. the outcome of recent internal audits
4. corrective and preventive actions
5. assessments by external bodies
6. the results of inter-laboratory comparisons or proficiency tests
7. changes in volume and type of work
8. client feed back
9. complaints
10. other relevant factors, such as laboratory health and safety, QC activities, resources, and staff training.

Findings from management reviews and the actions that arise from them shall be recorded and any corrective actions that arise shall be completed in an appropriate and agreed upon timescale.

**Complaints**

Complaints from clients are documented and given to the laboratory manager. The lab manager shall review the information and contact the client. If doubt is raised concerning the laboratory's policies or procedures, then an audit of the section or sections may be performed. All records of complaints and subsequent actions shall be maintained in the client compliant logbook for five years unless otherwise stated.

**Internal and External Reports**

The QA/QCO is responsible for preparation and submission of quality assurance reports to the appropriate management personnel as problems and issues arise. These reports include the assessment of measurement systems, data precision and accuracy, and the results of performance and system audits. Additionally, they include significant QA

problems, corrective actions, and recommended resolution measures. Reports of these Quality Assurance Audits describe the particular activities audited, procedures utilized in the examination and evaluation of laboratory records, and data validation procedures. Finally, there are procedures for evaluating the performance of Quality Control and Quality Assurance activities, and laboratory deficiencies and the implementation of corrective actions with the review requirements.

## 14.0 References (Analytical Protocols Utilized at HEAL)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# 13.0 BLOOMFIELD REFINERY UNDERGROUND PROCESS AND WASTEWATER LINES - Inspection & Repair Schedule

| Line Number | Description (Service) | Line Size | Line Length L/F | Starting Location | End Location | Drawing Reference | Construction Material | Next Inspection Scheduled | Last Inspection Date | Inspection Results Pass/Fail | Test/ Inspection Method | Repairs/Maint Needed | Repairs-Maint Completion date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Effilent Wtr. Transfer Line | 6 | 3250 | Effilent Pond Outlet Pump P-616 | Effluent Transfer P-671 | D-500-800-031 | PVC | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |
| 2 | Effilent Wtr. Trans. Pump | 6 | 908 | North Evaporation Pond Outlet | Effilent Transfer Pump P-671 | D-500-800-031 | PVC | 2014 | | | | | |
| 3 | Effilent Wtr. Pump Disch. | 6 | 2797 | Effluent Transfer P-671 | Injection Well Building | D-500-800-031 | PVC | 2014 | Oct-09 | Pass | Hydrostatic | None | N/A |
| 4 | Injection Well Recir. Line | 6 | 2512 | Injection Well Building | North Evaporation Pond | D-500-800-031 | PVC | 2014 | | | | | |
| 5 | River Terrace Transfer Line | 2 | 277 | River Terrace Processing Skid | River Pump Building Water Basin | D-500-800-043 | PVC | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 6 | Crude Transfer Line | 10 | 215 | Pipe Rack East Of LPG Stg Tks. | Pipe Rack Southwest of Tk. # 31 | D-700-800-106 (F-2) | Carbon steel | 2013 | Dec-13 | Pass | Praxair | None | N/A |
| 7 | Steam Header at Terminals | 6 | 215 | Pipe Rack Southwest of Tk. # 31 | Pipe Rack East Of LPG Stg. Tks. | N/A | Carbon steel | 2013 | Dec-13 | Pass | Praxair | None | N/A |
| 8 | Condensate Return Header | 4 | 215 | Pipe Rack East Of LPG Stg Tks. | Pipe Rack Southwest of Tk. # 31 | N/A | Carbon steel | 2013 | Dec-13 | Pass | Praxair | None | N/A |
| 9 | Premium Reciepts to Tk 32/36 | 4 | 218 | Pipe Rack East Of LPG Bullets | Pipe Rack Southwest of Tk. # 31 | D-600-800-118 (H-17) | Carbon steel | 2017 | May-12 | Pass | Hydrostatic | | |
| 10 | ULSD Sales Line | 10 | 218 | Pipe Rack Southwest of Tk. # 31 | Filter Pad Area North Of Loading Pad | D-700-800-100 (D-2) | Carbon steel | 2017 | Praxair 2012 | Pass | Praxair | None | N/A |
| 11 | Unleaded Gasoline Sales | 10 | 218 | Pipe Rack Southwest of Tk. # 31 | Filter Pad Area North Of Loading Pad | D-700-800-100 (C-2) | Carbon steel | 2017 | Praxair 2012 | Pass | Praxair | None | N/A |
| 12 | Transmix Sales from Tk #30 | 10 | 218 | Pipe Rack Southwest of Tk. # 31 | Filter Pad Area North Of Loading Pad | D-700-800-100 (C-2) | Carbon steel | 2014 | | | | | |
| 13 | Subgrade receipts to tanks 13, 14 | 4 | 218 | Pipe Rack Southwest of Tk. # 31 | Area Northeast of B-21 | D-600-800-118 (G-17) | Carbon steel | 2017 | Apr-12 | Pass | Hydrostatic | | |
| 14 | VRU Effluent | 3 | 275 | Pipe Rack Southwest of Tk. # 31 | East of B-21 | D-600-800-114 (D-1) | Carbon steel | 2015 | Aug-10 | Pass | Hydrostatic | None | N/A |
| 26 | VRU Effluent | 4 | 410 | East of B-21 | Manifold @ VRU Unit | D-700-800-106 (D-17) | Carbon steel | 2013 | Dec-13 | Pass | Praxair | None | N/A |
| 15 | VRU Return (Former Poly Feed Lines) | 2 | | Area Northeast of B-21 | Pipe Rack Southwest of Tk. # 31 | N/A | Carbon steel | *Temporarily Out of Service | | | | | |
| 16 | LPG Rerun Line | 2 | | Area Northeast of B-21 | Pipe Rack Southwest of Tk. # 31 | N/A | Carbon steel | *Temporarily Out of Service | | | | | |
| 17 | Saturate To Storage | 2 | | Pipe Rack Southwest of Tk. # 31 | Area Northeast of B-21 | N/A | Carbon steel | *Temporarily Out of Service | | | | | |
| 18 | C-4 To Storage | 2 | | Pipe Rack Southwest of Tk. # 31 | Area Northeast of B-21 | N/A | Carbon steel | *Temporarily Out of Service | | | | | |
| 19 | C-3 To Storage | 2 | | Pipe Rack Southwest of Tk. # 31 | Area Northeast of B-21 | N/A | Carbon steel | *Temporarily Out of Service | | | | | |
| 20 | Sour Naphtha sales From Tk. 23 | 8 | 534 | Pipe Rack Southwest of Tk. # 31 | Filter Pad Area North Of Loading Pad | D-700-800-100 (C-3) | Carbon steel | 2017 | Praxair 2012 | Pass | Praxair | None | N/A |
| 21 | Dyed Diesel Sales From Tk.18 | 6 | 534 | Pipe Rack Southwest of Tk. # 31 | Filter Pad Area North Of Loading Pad | D-700-800-100 (C-2) | Carbon steel | 2017 | praxair 2012 | Pass | Praxair | None | N/A |
| 22 | Slop Line From Loading Rack | 4 | 180 | Gasoline Rack Sump | West of Terminal Office | N/A | Carbon steel | 2005 | Dec-13 | Pass | Praxair | None | N/A |
| 23 | ULSD/Naptha receipts | 6 | 750 | South West Of Tk.# 25 | West of truck unload rack | D-600-800-118 (J-1) | Carbon steel | 2017 | Dec-12 | Pass | Hydrostatic | None | N/A |
| 24 | blinded | 8 | 392 | Pipe Rack West Of Tk.# 36 | Filter Pad Area North Of Loading Pad | D-700-800-100 (E-3) | Carbon steel | *Temporarily Out of Service | | | | | |
| 25 | Premium Sales from Tk. 32 | 6 | 392 | Pipe Rack West Of Tk.# 36 | Filter Pad Area North Of Loading Pad | D-700-800-100 (E-3) | Carbon steel | 2017 | praxair 2012 | Pass | Praxair | None | N/A |
| 27 | Naphta Feed To VRU Unit | 4 | | Transfer Pump @ Tk. # 44 | Manifold @ VRU Unit | NewTech 595-M-601 | Carbon steel | *Temporarily Out of Service | | | | | |
| 28 | blinded | 4 | | Manifold @ VRU Unit | Naptha Fill Line To Tk. # 44 | NewTech 595-M-601 | Carbon steel | *Temporarily Out of Service | | | | | |
| 29 | Off-Road Diesel To Bays #1 & 2 | 8 | 150 | From F-706 Filter Piping | To Meter Spools @ Bays # 1&2 | D-700-800-100 (C-17) | Carbon steel | 2017 | praxair 2012 | Pass | Praxair | None | N/A |
| 30 | Off road diesel To Bay # 3 | 6 | 150 | From F-706 Filter Piping | To Meter Spools @ Bays # 3 | D-700-800-100 (C-17) | Carbon steel | 2017 | praxair 2012 | Pass | Praxair | None | N/A |

*All lines that are temporarily out of service due to suspension of refining operations were steamed out and are hydrocarbon free

## 13.0 BLOOMFIELD REFINERY UNDERGROUND PROCESS AND WASTEWATER LINES - Inspection & Repair Schedule

| Line Number | Description (Service) | Line Size | Line Length L/F | Starting Location | End Location | Drawing Reference | Construction Material | Next Inspection Scheduled | Last Inspection Date | Inspection Results Pass/Fail | Test/ Inspection Method | Repairs/ Maint Needed | Repairs-Maint Completion date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | Premiun Sales Line | 10 | 150 | From F-705 Filter Piping | To Meter Spools @ Bays # 1,2 & 3 | D-700-800-100 (C-17) | Carbon steel | 2017 | praxair 2012 | Pass | Praxair | None | N/A |
| 32 | Unleaded GasolineSales Line | 10 | 150 | From F-704 Filter Piping | To Meter Spools @ Bays # 1,2 & 3 | D-700-800-100 (C-17) | Carbon steel | 2017 | praxair 2012 | Pass | Praxair | None | N/A |
| 33 | ULSD To Bay # 4 | 8 | 150 | From F-703 Filter Piping | To Meter Spool @ Bay # 4 | D-700-800-100 (D-17) | Carbon steel | 2017 | praxair 2012 | Pass | Praxair | None | N/A |
| 34 | Ethanol Pump Suction Line | 8 | 160 | From Tk. # 45 Outlet Nozzel | To P-707 & P-707A Pump Suction | D-700-800-007 | Carbon steel | 2017 | praxair 2012 | Pass | Praxair | None | N/A |
| 35 | Ethanol Unloading Line | 4 | 160 | From P-706 Pump Discharge | To Tk. # 45 Inlet Nozzel | D-700-800-007 | Carbon steel | 2017 | praxair 2012 | Pass | Praxair | None | N/A |
| 36 | Naphtha Unloading Line | 6 | | Suction Manifold @ P-607A | Unloading line @ Tk. #18 and 19 | B-600-500-296 | Carbon steel | *Temporarily Out of Service | | | | | |
| 37 | Naptha Rundown To Tk.# 35 | 3 | | Line From North Pipe Rack Area | To Tk. # 35 Fill Nozzle | B-600-500-232 | Carbon steel | *Temporarily Out of Service | | | | | |
| 38 | Naptha Feed Line to Unit | 4 | | From P-607A Pump Discharge | To North Pipe Rack Feed To Units | B-600-500-236 | Carbon steel | *Temporarily Out of Service | | | | | |
| 39 | Cooling Water Supply Line | 12 | | From # 1 Cooling Tower Pumps | To Rack Area @ Reformer Unit | D-500-500-011 | Carbon steel | *Temporarily Out of Service | | | | | |
| 40 | Cooling Water Return Line | 12 | | From Rack Area @ Reformer | To #1 Cooling Tower Water Inlet | D-500-500-011 | Carbon steel | *Temporarily Out of Service | | | | | |
| 41 | Cooling Water Supply Line | 20 | | From # 2 Cooling Tower Pumps | To S. End of FCC Unit @ Twr. 207 Area | D-201-500-123 | Carbon steel | *Temporarily Out of Service | | | | | |
| 42 | Cooling Water Return Line | 20 | | From South End of FCC Unit | To # 2 Cooling Tower Water Inlet | D-201-500-123 | Carbon steel | *Temporarily Out of Service | | | | | |
| 43 | Sewer Transfer Line | 10 | 54 | From Main Sewer Box # 12 | To Main Sewer Box # 11 | D-500-500-402 | Carbon steel | 2014 | | | | | |
| 44 | Sewer Transfer Line | 10 | 46 | From Main Sewer Box # 11 | To Observation Access Can # 10 | D-500-500-402 | Carbon steel | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |
| 45 | Sewer Transfer Line | 12 | 33 | From Observation Access Can #10 | To Observation Access Can # 6 | D-500-500-402 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 46 | Sewer Transfer Line | 12 | 73 | From Observation Access Can # 6 | To Main Sewer Box # 5 | D-500-500-402 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 47 | Sewer Transfer Line | 14 | 69 | From Main Sewer Box # 5 | To Observation Access Can # 4 | D-500-500-402 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 48 | Sewer Transfer Line | 14 | 86 | From Observation Access Can #4 | To Main Sewer Box # 3 | D-500-500-402 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 49 | Sewer Transfer Line | 12 | 62 | From Main Sewer Box # 9 | To main Sewer Box # 8 | D-500-500-402 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 50 | Sewer Transfer Line | 12 | 66 | From Main Sewer Box # 8 | To Main Sewer Box # 7 | D-500-500-402 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 51 | Sewer Transfer Line | 14 | 86 | From Main Sewer Box # 7 | To Main Sewer Box # 3 | D-500-500-402 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 52 | Sewer Transfer Line | 14 | 145 | From Main Sewer Box # 3 | To Observation Access Can #2 | D-500-500-402 | Carbon steel | 2014 | | | | | |
| 53 | Sewer Transfer Line | 14 | 100 | From Observation Access Can #2 | To Main Sewer Box # 1 | D-500-500-402 | Carbon steel | 2014 | | | | | |
| 54 | Sewer Transfer Line | 12/10 | 56 | From Main Sewer Box # 1 | To Inlet @ API Seperator | D-500-500-106 | Carbon steel | 2014 | | | | | |
| 55 | Sewer Collection Manifold | 8>4 | 56 | Area East Side of # 4 Boiler | To North Side of Sewer Box # 12 | D-500-500-402 | Carbon steel | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |
| 56 | Sewer Collection Manifold | 10>4 | 164 | Area @ & Around Crude Twr. | To North Side Of Sewer Box # 11 | D-500-500-402 | Carbon steel | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |
| 57 | Sewer Collection Manifold | 8>4 | 100 | Area @ & Around E-106A & B | To Northwest Of Sewer Box # 10 | D-500-500-402 | Carbon steel | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |
| 58 | Sewer Collection Manifold | 6 | 10 | Area @ V-101A Desalter | To East Side Of Sewer Box # 10 | D-500-500-402 | Carbon steel | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |

*All lines that are temporarily out of service due to suspension of refining operations were steamed out and are hydrocarbon free

## 13.0 BLOOMFIELD REFINERY UNDERGROUND PROCESS AND WASTEWATER LINES - Inspection & Repair Schedule

| Line Number | Description (Service) | Line Size | Line Length L/F | Starting Location | End Location | Drawing Reference | Construction Material | Next Inspection Scheduled | Last Inspection Date | Inspection Results Pass/Fail | Test/ Inspection Method | Repairs/ Maint Needed | Repairs-Maint Completion date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 59 | Sewer Collection Manifold | 10>4 | 452 | Area Thru Reformer Pump Row | To Observation Access Can # 6 | D-500-500-098 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 60 | Sewer Collection Manifold | 10>4 | 316 | Area Along East Side of Reformer | To Observation Access Can # 6 | D-500-500-098 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 61 | Sewer Collection Manifold | 8>4 | 60 | Area @ & Around V101 Desalter | To Observation Access Can #4 | D-500-500-402 | Carbon steel | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |
| 62 | Sewer Collection Manifold | 8>4 | 140 | Area @ & Around T-101 Tower | To West Side Of Sewer Box # 9 | D-500-500-402 | Carbon steel | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |
| 63 | Sewer Collection Manifold | 8>4 | 104 | Area @ & Around P101 Charge P. | To North Side Of Sewer Box # 9 | D-500-500-402 | Carbon steel | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |
| 64 | Sewer Collection Manifold | 8>4 | 88 | Area @ & Around T-103 Tower | To Northwest Side Of Sewer Box # 8 | D-500-500-402 | Carbon steel | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |
| 65 | Sewer Collection Manifold | 8>4 | 92 | Area @ & Around Heavy Oil Exch. | To North Side Of Sewer Box # 8 | D-500-500-402 | Carbon steel | 2015 | Jul-10 | Pass | Hydrostatic | None | N/A |
| 66 | Sewer Collection Manifold | 8>4 | 41 | Area @ & Around Main Air Blower | To Northwest Side Of Sewer Box # 3 | D-500-500-134 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 67 | Sewer Collection Manifold | 6>3 | 324 | Area @ Burner Fuel Loading and Manifold | To Observation Access Can (Precipitator) | D-600-500-127 | Carbon steel | 2014 | | | | | |
| 68 | Sewer Collection Manifold | 4 | 141 | Area Drains @ Air Building | To Sewer Transfer Line( Box # 1 to API) | D-500-500-160 | Carbon steel | 2014 | | | | | |
| 69 | Sewer Collection Manifold | 4 | 86 | P-224 Pump & Cat Surface Drain | To Sewer Transfer Line From FCC Process | D-201-500-001 | Carbon steel | 2014 | Jul-09 | Pass | Hydrostatic | None | N/A |
| 70 | Sewer Collect./Transfer Line | 6 | 896 | Gas Con Unit Collection M.H. | To FCC Sewer Box Manhole # 13 | D-201-500-001 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 71 | Sewer Transfer Line | 10 | 35 | From FCC Sewer Box M.H. # 13 | To FCC Sewer Box # 14 (Roadway) | D-201-500-001 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 72 | Sewer Transfer Line | 10 | 235 | From FCC Sewer Box M.H. #14 | To 20" Inlet @ API | D-500-500-106 | Carbon steel | 2014 | | | | | |
| 73 | Sewer Collection Manifold | 6/4 | 335 | Area @ & Around Gas Con. Unit | To Gas Con. Unit Sewer Collection | D-200-200-233 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 74 | Sewer Transfer Line | 10 | 159 | From Treater Main Sewer Box # 16 | To Sewer Box #15 - S.E. Of C-204 | D-500-500-166 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 75 | Sewer Transfer Line | 10 | 162 | Sewer Box #15 - S.E. Of C-204 | To 20" Inlet @ API | D-500-500-105 | Carbon steel | 2014 | | | | | |
| 76 | Sewer Collection Manifold | 10>4 | 411 | Area In & Around Treater Unit | To Treater Sewer Box At South Side Of Unit | D-500-500-122 | Carbon steel | 2016 | Aug-11 | Pass | Hydrostatic | None | N/A |
| 77 | Sewer Collection Manifold | 6>2 | | Area In & Around Poly Unit | To Inlet Bay @ API | D-500-500-126 | Carbon steel | out of service | May-09 | Pass | Hydrostatic | None | N/A |
| 78 | Sewer Transfer Line | 10 | 130 | From Sewer Box # 17 @ DHT Unit | To Sewer Box # 18 @ S.E. Corner of Poly | D-500-500-097 | Carbon steel | 2016 | Aug-11 | Pass | Replaced with Stainless Steel Piping | None | N/A |
| 79 | Sewer Transfer Line | 12 | 35 | From Sewer Box # 18 | To Inlet Manifold @ API Basin Area | | Carbon steel | 2014 | | | | | |
| 80 | Sewer Collection Manifold | 10>4 | 635 | Area In & Around DHT/Larox Unit | To Sewer Box # 18 @ S.E. Corner of DHT | | Carbon steel | 2016 | Aug-11 | Pass | Hydrotest | None | N/A |
| 81 | Crude Transfer Line | 12 | 99 | Pipe Rack East Of LPG Stg Tks. | Pipe Rack South of Crude Unloading Bays | D-000-900-023 | Carbon steel | 2014 | Dec-13 | Pass | Praxair | None | N/A |
| 82 | Crude Transfer Line | 12 | 194 | Pipe Rack South of Crude Unloading Bays | Berm South of Tank #43 | D-000-900-023 | Carbon steel | 2014 | Dec-13 | Pass | Praxair | None | N/A |
| 83 | Sewer Transfer Line | 4 | 822 | Discharge at Tk #37 | Valve box at corner Northeast of DHT | AMEC 6/7 | Carbon Steel/PVC | 2015 | Jun-10 | Pass | Hydrostatic | None | N/A |
| 84 | Sales Line from Tk #3 & 4 | 8 | 300 | Area West of API Separator | DHT Option City | | Carbon Steel | *Temporarily Out of Service | | | | | |
| 85 | Diesel Reciepts (truck) | 6 | 25 | Roadway SW of Tk #17 | Piperack btwn Tk #34 and Tk #25 | D-800-600-104(F-1) | Carbon Steel | 2015 | Jun-10 | Pass | Hydrotest | None | N/A |
| 86 | Premium/Uneaded Reciepts | 6 | 25 | Roadway SW of Tk #17 | Piperack btwn Tk #24 and Tk #25 | D-600-800-099 D-600-800-113 | Carbon Steel | 2015 | Jun-10 | Pass | Hydrotest | None | N/A |
| 87 | Groundwater Recovery Transfer Line | 3 | 970 | Tk #38 | Slop Line NE of Tk #31 | D-600-800-121 | Carbon Steel | 2015 | Aug-10 | Pass | Hydrotest | None | N/A |
| 88 | Injection Well Transfer | 4 | 45 | Injection Well Building | Downhole Injection Well | D-500-800-031 | Carbon Steel | 2015 | Oct-10 | Pass | Hydrotest | None | N/A |

*All lines that are temporarily out of service due to suspension of refining operations were steamed out and are hydrocarbon free

## 13.0 BLOOMFIELD REFINERY UNDERGROUND PROCESS AND WASTEWATER LINES - Inspection & Repair Schedule

| Line Number | Description (Service) | Line Size | Line Length L/F | Starting Location | End Location | Drawing Reference | Construction Material | Next Inspection Scheduled | Last Inspection Date | Inspection Results Pass/Fail | Test/ Inspection Method | Repairs/ Maint Needed | Repairs-Maint Completion date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 89 | VRU Return to Tanks 13 and 14 | 3 | 32 | Pipe Bridge South of Tanks 13 and 14 | Exits inside South Wall of Containtment Berm | B-600-500-532 | Carbon Steel | 2016 | Jan-11 | Pass | Hydrostatic | None | N/A |
| 90 | Tie-in Tank 11 Crude to LACT | 6 | 116 | Pipe Bridge North of LACT Unit | 10 ft East of Tie-in to LACT Unit | B-600-500-561 | Carbon Steel | 2016 | Dec-11 | Pass | Hydrostatic | None | N/A |
| 91 | Crude to Tank 11 | 6 | 34 | Under Pipe Rack South of Tank 11 | Exits Berm South of Tank 11 | B-600-500-558 | Carbon Steel | 2016 | 11-Nov | Pass | Hydrostatic | None | N/A |

Total Linear Feet of Lines 23509

# BLOOMFIELD REFINERY SEWER BOXES - Inspection & Repair Schedule

| Sewer Box Number | Location | Type Material | Drawing Reference | Actual Inspection Date | Inspection results Pass/Fail | Repairs/Maint Needed | Repairs/Maint Completion date |
|---|---|---|---|---|---|---|---|
| 1 | Northwest of Main Pipe Bridge | Concrete | D-500-500-134 | Not Tested | N/A | N/A | N/A |
| 2 | Southeast of Precipitator | Steel | D-500-500-134 | Not Tested | N/A | N/A | N/A |
| 3 | Southeast of Main Blower | Concrete | D-500-500-134 | N/A | O/S | N/A | N/A |
| 4 | Southeast of Old Desalter | Concrete | D-500-500-134 | N/A | O/S | N/A | N/A |
| 5 | Southeast of Control Room | Concrete | D-500-500-134 | N/A | O/S | N/A | N/A |
| 6 | Southeast of Reformer | Concrete | D-500-500-124 | N/A | O/S | N/A | N/A |
| 7 | Southwest of Mainblower | Concrete | D-500-500-124 | N/A | O/S | N/A | N/A |
| 8 | South of E-113's | Concrete | D-500-500-124 | N/A | O/S | N/A | N/A |
| 9 | South of P-105's | Concrete | D-500-500-124 | N/A | O/S | N/A | N/A |
| 10 | West of New Desalter | Concrete | D-500-500-124 | N/A | O/S | N/A | N/A |
| 11 | South of T-102 | Concrete | D-500-500-124 | N/A | O/S | N/A | N/A |
| 12 | South of P-103;s | Concrete | D-500-500-124 | N/A | O/S | N/A | N/A |
| 13 | In Roadway South of FCCU | Concrete | D-500-500-134 | N/A | O/S | N/A | N/A |
| 14 | In Roadway Southwest of C-801's | Concrete | D-500-500-134 | N/A | O/S | N/A | N/A |
| 15 | In Roadway Southeast of Wet Gas | Concrete | D-500-500-134 | N/A | O/S | N/A | N/A |
| 16 | South of Treater | Concrete | D-500-500-134 | N/A | O/S | N/A | N/A |
| 17 | In Roadway East of DHT | Steel | D-500-500-134 | Not Tested | N/A | N/A | N/A |
| 18 | In Roadway Southeast of Poly Unit | Concrete | D-500-500-134 | Not Tested | N/A | N/A | N/A |

N/A = Not Applicable

O//S = Out of Service

# BLOOMFIELD REFINERY SUMPS - Inspection & Repair Schedule

| Sump Number | Location | Type Material | Drawing Reference | Actual Inspection Date | Inspection results Pass/Fail | Repairs/Maint Needed | Repairs/Maint Completion date |
|---|---|---|---|---|---|---|---|
| 16 | Sump @ S.W. Side Of Tk. 3 | Concrete | D-000-900-023 | O/S | O/S | N/A | N/A |
| 17 | Sump Between Tk. 3 & 4 | Concrete | D-000-900-023 | O/S | O/S | N/A | N/A |
| 18 | Sump Between Tk. 4 & 5 | Concrete | D-000-900-023 | O/S | O/S | N/A | N/A |
| 19 | Sump @ N.Side Of Tk. 5 | Concrete | D-000-900-023 | 11/14/2013 | Pass | None | N/A |
| 20 | Sump Between Tk. 11 & 12 | Concrete | D-000-900-023 | 11/14/2013 | Pass | None | N/A |
| 21 | Sump Between Tk. 13 & 14 | Concrete | D-000-900-023 | 11/14/2013 | Pass | None | N/A |
| 22 | Sump @ N. Side Of Tk. 17 | Sump Removed | D-000-900-023 | Removed | N/A | N/A | N/A |
| 23 | Sump @ N.E. Side Of Tk. 18 | Concrete | D-000-900-023 | 12/10/2013 | Pass | None | N/A |
| 24 | Sump @ N.E. Side Of Tk. 19 | Concrete | D-000-900-023 | 12/10/2013 | Pass | None | N/A |
| 25 | Sump @ S.W. Side Of Tk. 20 | DW Steel | D-000-900-023 | 12/3/2013 | Pass | None | N/A |
| 26 | Sump @ S. Side Of Tk. 23 | Concrete | D-000-900-023 | 11/14/2013 | Pass | None | N/A |
| 27 | Sump @ E. Side Of Tk. 24 | DW Steel | D-000-900-023 | 12/3/2013 | Pass | None | N/A |
| 28 | Sump @ E. Side Of Tk. 25 | DW Steel | D-000-900-023 | 12/3/2013 | Pass | None | N/A |
| 29 | Sump @ N.W. Side Of Tk. 26 | Concrete | D-000-900-023 | O/S | O/S | N/A | N/A |
| 30 | Sump @ S.E. Side Of Tk. 27 | Concrete | D-000-900-023 | O/S | O/S | N/A | N/A |
| 31 | Sump @ West Side Of Tk. 28 | Concrete | D-000-900-023 | Not Tested | N/A | N/A | N/A |
| 32 | Sump @ N.E. Side Of Tk. 29 | Concrete | D-000-900-023 | O/S | O/S | N/A | N/A |
| 33 | Sump @ S.W. Side Of Tk. 30 | Concrete | D-000-900-023 | 11/15/2013 | Pass | None | N/A |
| 34 | Sump @ N.W. Side Of Tk. 31 | Concrete | D-000-900-023 | 11/15/2013 | Pass | None | N/A |
| 35 | Sump @ S.E. Side Of Tk. 31 | Concrete | D-000-900-023 | 11/14/2013 | Pass | None | N/A |
| 36 | Sump @ East Side Of Tk. 32 | Concrete | D-000-900-023 | 11/14/2013 | Pass | None | N/A |
| 37 | Sump @ N.E. Side Of Tk. 35 | DW Steel | D-000-900-023 | 12/3/2013 | Pass | None | N/A |
| 38 | Sump @ N.E. Side Of Tk. 36 | DW Steel | D-000-900-023 | 12/3/2013 | Pass | None | N/A |
| 39 | Sump @ S. Side Of Tk. 18 | Concrete | D-000-900-023 | 12/10/2013 | Pass | None | N/A |
| 40 | Sump @ S. Side Of Tk. 19 | Concrete | D-000-900-023 | 12/10/2013 | Pass | None | N/A |
| 41 | Sump @ S. Side Of Flare | Concrete | D-000-900-023 | O/S | O/S | N/A | N/A |
| 42 | Sump @ N.W. Of Precipitator | Concrete | D-000-900-023 | O/S | O/S | N/A | N/A |

DW = Double Wall
O/S = Out of Service
N/A = Not Applicalble

## 13.0 BLOOMFIELD REFINERY TANKS - Inspection & Repair Schedule (*schedule set according to API 650 & 653 )

| Tank # | Service | Normal Capacity (bbls) | Last Test/ Inspection | Test/ Inspection Method | Next Test/ Inspection Scheduled | Date OCD-SFO Requirements Satisfied | Test/ Inspection Date | Repairs/Maint Needed | Repairs/Maint Completion Date |
|---|---|---|---|---|---|---|---|---|---|
| 2 | FILTERED WATER | 64,347 | 2010 | Internal | 2015 | 2010 | 11/13/2010 | None | 11/13/2010 |
| 3 | NAPHTHA - O/S | 9,365 | 2003 | O/S | 2013 | 2013 | O/S | Out of Service | N/A |
| 4 | NAPHTHA - O/S | 9,365 | 2003 | O/S | 2013 | 2013 | O/S | Out of Service | N/A |
| 5 | WASTE WATER SURGE | 9096 | 2008 | Internal | 2018 | 2008 | 5/28/2008 | None | N/A |
| 8 | CRUDE SLOP | 460 | 2007 | External (Concrete Liner) | 2017 | 2007 | 6/7/2007 | None | N/A |
| 9 | CRUDE SLOP | 460 | 2007 | External (Concrete Liner) | 2017 | 2007 | 11/10/07 | None | N/A |
| 10 | SPENT CAUSTIC - O/S | 360 | O/S | O/S | O/S | 2007 | O/S | Out of Service | O/S |
| 11 | CRUDE | 50,358 | 2011 | Internal | 2021 | 2011 | 11/2/2011 | Floor Coating ** | N/A |
| 12 | CRUDE | 50,358 | 2012 | Internal | 2022 | 2012 | 4/3/2012 | Emptied, Cleaned - Not Inspected | 7/5/2012 |
| 13 | UNLEAD SALES | 27,646 | 2010 | Internal | 2020 | 2010 | 5/15/2010 | New Floor Installed | 5/15/2011 |
| 14 | UNLEAD SALES | 27,615 | 2005 | Internal | 2015 | 2005 | 9/21/2005 | None | N/A |
| 17 | CAT FEED - O/S | 38403 | 2007 | Internal | 2017 | 2007 | 1/15/2010 | O/S | N/A |
| 18 | #1 DIESEL SALES - O/S | 50358 | 2013 | Internal | 2023 | 2013 | 4/30/2013 | New Floor | 9/15/2013 |
| 19 | #2 DIESEL SALES | 34991 | 2010 | Internal | 2020 | 2010 | 12/01/10 | Floor Repair | 12/28/2010 |
| 20 | NAPHTHA | 10000 | 2007 | Internal | 2017 | 2007 | 10/29/07 | New Construction | N/A |
| 23 | BASE GASOLINE | 38,402 | 2012 | Internal | 2022 | 2012 | 10/15/12 | Floor Coating | N/A |
| 24 | ULS DIESEL | 10107 | 2006 | Internal | 2016 | 2006 | 03/01/06 | New Construction | N/A |
| 25 | ULS DIESEL | 10107 | 2006 | Internal | 2016 | 2006 | 02/06/06 | New Construction | N/A |
| 26 | SWEET NAPHTHA | 3,264 | 2008 | Praxair | 2018 | 2008 | 05/29/08 | O/S | N/A |
| 27 | HEAVY BURNER FUEL - O/S | 9,854 | 2006 | Internal | 2016 | 2006 | 08/31/06 | O/S | N/A |
| 28 | CRUDE | 77,854 | 2012 | Internal | 2015 | 2012 | 05/08/12 | Floor Coating | 5/8/2012 |
| 29 | #2 DIESEL/FCC SLOP - O/S | 16,676 | 2005 | Internal | 2013 | 2005 | 07/10/10 | O/S | N/A |
| 30 | TRANSMIX | 16,676 | 2004 | Internal | 2014 | 2004 | 06/20/04 | None | N/A |
| 31 | CRUDE | 98,676 | 2013 | Internal | 2023 | 2013 | 06/01/13 | New Floor and Seal Installed | 10/1/2013 |
| 32 | PREMIUM UNLEAD SALES | 17,913 | 2009 | Internal/UTS* | 2019 | 2009 | 04/01/09 | None | N/A |
| 33 | RECOVERY WELL WATER | 360 | 2008 | Internal | 2018 | 2008 | 04/09/08 | O/S | N/A |
| 34 | INJECTION WELL RESERVIOR | 360 | 2013 | Internal | 2023 | 2013 | 06/01/13 | New Tank Installed | 6/1/2013 |
| 35 | REFORMER FEED | 43904 | 2012 | Internal | 2022 | 2012 | 09/22/12 | Floor Repair | 9/22/2012 |
| 36 | PREMIUM UNLEAD SALES | 43904 | 2005 | Internal | 2015 | 2005 | 08/24/05 | None | N/A |
| 37 | FRENCH DRAIN | 121 | 2013 | Internal/UTS* | 2023 | 2013 | 03/15/13 | New Tank Installed | 3/15/2013 |
| 38 | EAST OUTFALL | 302 | 2013 | Internal | 2023 | 2013 | 05/20/13 | New Tank Installed | 5/20/2013 |

| Tank # | Service | Normal Capacity (bbls) | Last Test/ Inspection | Test/ Inspection Method | Next Test/ Inspection Scheduled | Date OCD-SFO Requirements Satisfied | Test/ Inspection Date | Repairs/Maint Needed | Repairs/Maint Completion Date |
|---|---|---|---|---|---|---|---|---|---|
| 41 | CRUDE STORAGE | 2798 | 2008 | Praxair | 2018 | 2008 | 05/29/08 | None | N/A |
| 42A | TERMINALS SLOP | 400 | 2007 | API 650 | 2017 | 2007 | 06/01/07 | New Construction | N/A |
| 42B | TERMINALS SLOP | 400 | 2007 | API 650 | 2017 | 2007 | 06/01/07 | New Construction | N/A |
| 43 | TERMINALS SLOP | 560 | O/S | O/S | O/S | O/S | O/S | Out of Service | O/S |
| 44 | ETHANOL | 1,751 | 2008 | Praxair | 2018 | 2008 | 05/29/08 | None | N/A |
| 45 | ETHANOL | 4821 | 2008 | Internal | 2018 | 2008 | 02/20/08 | None | N/A |

* UTS = Utransonic Thickness Survey O/S = Out of Service N/A = Not Applicable

** = Floor Coating was done due to the Tank's change of service only.

# Waste 2013

| Pick-up Date | Manifest # | Description | Containers | | Quantity | Destination | Treatment | Cert. of Disposal/ Consumption |
|---|---|---|---|---|---|---|---|---|
| | | | No. | Type | | | | |
| 2/12/2013 | 6114605 FLE | NA3077, Hazardous Waste, Solid (Crude Oil Tank Bottoms PPE) K169 | 1 | CF | 210 P | Clean Harbors El Dorado LLC 309 American Circle El Dorado, AR 71730 | H040 - Incinteration | Yes |
| 2/12/2013 | 6114605 FLE | NA3077, Hazardous Waste, Solid (Main Column Bottom Sludge) D008, D009, K170 | 1 | DM | 600 P | Clean Harbors El Dorado LLC 309 American Circle El Dorado, AR 71730 | H040 - Incinteration | Yes |
| 5/15/2013 | 6565488 FLE | NA3077, Hazardous Waste, Solid (Crude Oil Tank Bottoms PPE) K169 | 4 | CF | 1640 P | Clean Harbors El Dorado LLC 309 American Circle El Dorado, AR 71730 | H040-Incineration | Yes |
| 5/15/2013 | 6565488 FLE | NA3077, Hazardous Waste, Solid (Main Column Bottom Sludge) D008, D009, K170 | 1 | DM | 480 P | Clean Harbors El Dorado LLC 309 American Circle El Dorado, AR 71730 | H040-Incineration | Yes |
| 5/15/2013 | 006565489 FLE | NA3082, Hazardous Waste, Sludge (Vacuum Truck Sludge) (F037) | 5 | DM | 3780 P | Clean Harbors Deer Park, LLC 2027 Independence Parkway South La Porte, TX 77571 | H040-Incineration | Yes |

CF = Fiber Board Yard Box
DM = Drum, Metal
P = Pounds