GW - 028

ANNUAL GROUND WATER REPORT

2011

ARCADIS

Johnny Lackey
Senior Environmental Manager
Navajo Refining Company, Artesia Refinery

Pamela Krueger
Senior Project Manager, ARCADIS

2011 Annual Groundwater Report

RCRA Permit No. NMD048918817
Discharge Permit GW-028

Prepared for:
New Mexico Environment Department
Hazardous Waste Bureau
and
New Mexico Energy, Minerals and Natural Resources Department - Oil Conservation Division

Prepared by:
ARCADIS
2929 Briarpark
Suite 300
Houston
Texas 77042
Tel 713.953.4800
Fax 713.977.4620

Our Ref.:
TX000836.0004.00004

Date:
March 29, 2012

Tables

Figures

Appendices (all on compact disc)

List of Acronyms

AOC	Area of Concern
CAI	Corrective Action Investigation
CFR	Code of Federal Regulations
CGWSL	Critical Groundwater Screening Level
COCs	Constituents of Concern
DO	Dissolved Oxygen
DRO	Diesel Range Organics
EPA	Environmental Protection Agency
EP	Evaporation Ponds
FWGMWP	Facility Wide Groundwater Monitoring Work Plan
GRO	Gasoline Range Organics
HWB	Hazardous Waste Bureau
MCL	Maximum Contaminant Level
mg/L	milligrams per liter
MTBE	Methyl-Tert-Butyl Ether
MW	Monitoring Wells
NCL	North Colony Landfarm
NMED	New Mexico Environment Department
NWS	National Weather Service

OCD	Oil Conservation Division
ORP	Oxidation-Reduction Potential
PCC	Post Closure Permit
PSH	Phase-Separated Hydrocarbons
RCRA	Resource Conservation and Recovery Act
RO	Reserve Osmosis
RW	Recovery Wells
TDS	Total Dissolved Solids
TEL	Tetra Ethyl Lead
TPH	Total Petroleum Hydrocarbons
VOCs	Volatile Organic Compounds
WQCC	Water Quality Control Commission

Executive Summary

The Navajo Refining Company (Navajo) owns and operates the Artesia Refinery (Refinery) in Artesia, New Mexico. The facility has been in operation since the 1920s and processes crude oil into asphalt, fuel oil, gasoline, diesel, jet fuel and liquefied petroleum gas. Navajo maintains a groundwater monitoring program according to the requirements of the Post-Closure Care Permit (PCC Permit), which is administered by the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB). The PCC Permit (NMED, 2010b) was modified and re-issued in December 2010 with an effective date of January 14, 2011. The PCC Permit also requires Navajo (the Permittee) to recover phase-separated hydrocarbons (PSH), where present, from the shallow groundwater.

The Refinery is also regulated by the New Mexico Energy, Minerals and Natural Resources Department – Oil Conservation Division (OCD). The OCD issued a renewal to Discharge Permit GW-028 (OCD, 2008) dated August 20, 2008. Among other requirements, the Discharge Permit requires semiannual facility-wide groundwater monitoring and submittal of an annual report summarizing the groundwater monitoring and remediation conducted throughout each year.

An updated Facility Wide Groundwater Monitoring Work Plan (FWGMWP) (ARCADIS, 2010) was submitted to NMED and OCD on October 28, 2010. The FWGMWP incorporates provisions of both the PCC Permit and the Discharge Permit and is updated annually, as required by the PCC Permit. The first semiannual monitoring event of 2011, conducted between March 22 and April 15, 2011, was performed according to the October 2010 FWGMWP, which was approved on November 9, 2010 (NMED, 2010a).

The FWGMWP (ARCADIS, 2011b) was updated and submitted to NMED and OCD on June 28, 2011, as required by the PCC Permit. Approval, with modifications, was received from NMED in a letter dated September 1, 2011 (NMED, 2011b). The second semiannual monitoring event of 2011, conducted between September 6 and September 29, 2011, was performed according to the updated 2011 FWGMWP (ARCADIS, 2011d).

This 2011 Annual Groundwater Report follows the format specified in Appendix E.4 of the PCC Permit and summarizes the activities performed throughout 2011 to comply with the two revisions of the FWGMWP.

The activities performed during 2011 included installation of two monitoring wells as part of the Area of Concern (AOC) Group 3 Corrective Action Investigation (CAI), collection of field data, collection of groundwater samples for chemical analyses, and remediation system monitoring. Some exceptions to the planned groundwater monitoring occurred as described in the body of this report.

Field measurements, analytical data and remediation system documentation are summarized in this report. Maps depicting the groundwater gradient, thickness of PSH, and diesel range organics (DRO), arsenic, benzene and naphthalene groundwater screening level exceedance areas have been provided. Detailed plots of concentrations of constituents of concern (COCs) in each monitoring well over time have been provided as an appendix. Detailed plots of the static water level in each monitoring well versus time have also been provided as an appendix.

The following conclusions are based upon the information obtained in 2011 and comparison to data from prior years:

- Groundwater flow direction and gradient remains consistent with that measured in past years.
- The PSH plumes appear to have changed somewhat between 2010 and 2011, as follows:
    - The thickness of PSH southeast of the North Colony Landfarm (NCL) has decreased somewhat since the end of 2010, but the plume has extended toward the north and south.
    - The extent of PSH in the Tetra Ethyl Lead (TEL) area has decreased.
    - The thickness of PSH in the north Refinery area (MW-97) has fluctuated but the extent of the PSH remained consistent.
    - The thickness of the PSH plume in the south Refinery area appears fairly consistent, with a slight shift to the south of US-82 at KWB-2R. The thicknesses of PSH in this area have fluctuated and appear to fluctuate between seasons.

  - The thickness and extent of the PSH plume east of the Refinery, near Bolton Road showed an increase between 2010 and 2011. The thicknesses of PSH in this plume decreased between the first and second semiannual events of 2011.

  - The thickness and extent of PSH at the western end of the Evaporation Ponds remained consistent between the second semiannual event of 2010 and both events of 2011.

- Concentrations of organic constituents in groundwater have generally remained stable or have declined, with the exception of the benzene concentration east of Bolton Road. The presence of benzene in this area will be confirmed or denied during the 2012 monitoring events.

- The recovery trench system was manually operated during portions of 2011, but not all equipment was operable and therefore the recovery system was not as effective as in previous years.

Navajo is currently designing and implementing an upgrade of the recovery trench system, including installation of separate product and produced groundwater piping, standardized pumps and improved gauges. A copy of the conceptual design for the upgraded system was submitted to NMED and OCD in January 2011 (ARCADIS, 2011a). The detailed design of the upgrades was completed in 2011. Construction of the upgrades to the recovery system began in December 2011 and will be completed in March 2012. The upgraded system will be operated throughout the balance of 2012 and Navajo expects to see improved recovery from the upgraded system.

As per the requirements of the updated PCC Permit, an updated FWGMWP will be submitted in June 2012.

1. Introduction

The Navajo Refining Company (Navajo) owns and operates the Artesia Refinery (Refinery) in Artesia, New Mexico (Figure 1). The facility has been in operation since the 1920s and processes crude oil into asphalt, fuel oil, gasoline, diesel, jet fuel and liquefied petroleum gas. The facility is regulated under the Resource Conservation and Recovery Act (RCRA). In October 2003, the Secretary of the New Mexico Environment Department (NMED) issued a Post-Closure Care Permit (PCC Permit) to Navajo for the Artesia Refinery Facility (U.S. Environmental Protection Agency (EPA) ID number NMD048918817). The PCC Permit was modified and re-issued in December 2010 (NMED, 2010b) with an effective date of January 14, 2011.

The PCC Permit authorizes and requires Navajo (the Permittee) to conduct post-closure care at the closed Tetra Ethyl Lead (TEL) surface impoundment and take appropriate actions to achieve RCRA closure of the inactive North Colony Landfarm (NCL) treatment unit and the inactive Evaporation Ponds (EP) at the Artesia Refinery. These areas and the locations of all existing monitoring and recovery wells are shown on Figure 2.

Among other action items, the PCC Permit requires the Permittee to maintain a groundwater monitoring program, which can evaluate the effectiveness of the corrective action program for groundwater and that meets the requirements of 20.4.1.500 NMAC (incorporating 40 Code of Federal Regulations (CFR) Part 264, Subpart F) during the post-closure care period. The PCC Permit also requires the Permittee to recover phase-separated hydrocarbons (PSH), where present, from the shallow groundwater.

The Artesia Refinery is also regulated by the New Mexico Energy, Minerals and Natural Resources Department – Oil Conservation Division (OCD). The OCD issued a renewal to Discharge Permit GW-028 (OCD, 2008) dated August 20, 2009. Among other requirements, the Discharge Permit requires semiannual facility wide groundwater monitoring and submittal of an annual report summarizing the groundwater monitoring and remediation conducted throughout each year.

An updated Facility Wide Groundwater Monitoring Work Plan (FWGMWP) (ARCADIS, 2010) was submitted to NMED and OCD on October 28, 2010. The FWGMWP incorporates provisions of both the PCC Permit and the Discharge Permit and is updated annually, as required by the PCC Permit. The first semiannual monitoring event of 2011, conducted between March 22, 2011 and April 15, 2011, was performed

according to the October 2010 FWGMWP, which was approved on November 9, 2010 (NMED, 2010a).

The FWGMWP (ARCADIS, 2011b) was updated and submitted to NMED and OCD on June 28, 2011, as required by the PCC Permit. Approval, with modifications, was received from NMED in a letter dated September 1, 2011 (NMED, 2011b). The second semiannual monitoring event of 2011, conducted between September 6, 2011 and September 29, 2011, was performed according to the updated 2011 FWGMWP (ARCADIS, 2011d).

This 2011 Annual Groundwater Report follows the format specified in Appendix E.4 of the PCC Permit and summarizes the activities performed throughout 2011 to comply with the two revisions of the FWGMWP.

2. Scope of Services

The groundwater monitoring and associated activities performed during 2011 are described in detail in this section. The first semiannual sampling event began on March 22, 2011 and was completed on April 15, 2011. The second semiannual sampling event began on September 6, 2011 and was completed on September 29, 2011.

2.1 Monitoring Well Installation

In January 2011, two monitoring wells identified as MW-109 and MW-110 were installed as part of the AOC Group 3 CAI. These wells were installed south of US Highway 82 using a hollow stem auger drill rig. Both wells were installed to a total depth of 30 feet below ground surface (bgs). Well completion logs were included in the AOC Group 3 Corrective Action Investigation Report (ARCADIS, 2011c) dated July 2011 but a copy of these logs has been provided in Appendix A of this report as well.

2.2 PSH and Water Level Measurements

At the beginning of each of the two semiannual sampling events, the depth to PSH, depth to water, and total depth in the monitoring and recovery wells was measured. Measurements were made using an oil/water interface probe attached to a measuring tape marked in 0.01-foot increments. The measurements were made in relation to the surveyed datum on each well casing. In the event that the survey datum mark was not visible, measurements were made at the northern side of each well riser which is the default survey datum location. Measurements were recorded on the field data sheets for each event.

Well gauging for the first semiannual sampling event began on March 22, 2011 and was completed on March 25, 2011. No rainfall was recorded at the National Weather Service (NWS) gauging station, located approximately 6 miles south of the Refinery, during this time period. A copy of the NWS data for March 2011 is provided in Appendix B with the field sampling notes for this event.

Well gauging for the second semiannual sampling event began on September 6, 2011 and was completed on September 9, 2011. Due to an oversight, monitoring well KWB-10R was not gauged during the initial gauging event. Fluid levels for this well were collected on September 26, 2011. No rainfall was recorded at the NWS gauging station between September 6 and 9, 2011. However, 2.06 inches of rainfall were

recorded at the gauging station between September 9, 2011 and the September 26, 2011. A copy of the NWS data for September 2011 is provided in Appendix B.

Table 1 summarizes the gauging data collected during both semiannual sampling events for 2011. Figures 3 through 6 depict the potentiometric surface maps for the shallow saturated zone and valley fill zone based on measurements collected during the two semiannual sampling events.

2.3 Groundwater Sample Collection and Handling

Groundwater samples were collected during each of the two semiannual sampling events. The wells designated for sample collection during the first semiannual sampling event were listed in the approved FWGMWP dated October 2010. The wells designated for sample collection during the second semiannual sampling event were listed in the approved FWGMWP dated June 2011 and updated October 2011. As per the FWGMWP, if a well designated for sample collection contained more than 0.3 feet of PSH, no sample was collected from that well for that event.

Samples were collected from monitoring wells using either low-flow sampling procedures consistent with the approved work plan or a dedicated ProActive submersible pump and dedicated tubing. Samples were collected from recovery wells using a submersible sampling pump or the recovery pump, depending on the location. Samples collected from irrigation wells were collected from a valve in the irrigation piping as near the well as possible. Table 2 indicates the method by which each well was purged and sampled.

Prior to collection of samples, each monitoring and recovery well was purged by pumping groundwater using either a peristaltic pump or a submersible pump and dedicated tubing. During the well purging process, water quality parameters, including pH, conductivity, dissolved oxygen (DO), temperature and oxidation-reduction potential (ORP), were measured at regular intervals using an instrument such as a YSI multiparameter water quality meter. The water quality parameters were recorded on the field log for each well and a copy of the field logs is provided in Appendix B. The final water quality parameters measured at each well are summarized in Table 2.

Some of the DO measurements recorded during the first semiannual monitoring event of 2011 are suspect. The concentration of DO in air saturated water at sea level is 8.6 milligrams per liter (mg/L). All of the DO measurements above 8 mg/L are believed to be a result of an incorrectly calibrated DO meter. NMED commented on the DO concentrations in the Approval with Modifications letter dated August 12, 2011 (NMED,

2011a) regarding the 2010 annual report. As a result, the field crew was instructed to review all DO readings and to ensure proper calibration of the meter. Measurements over 8 mg/L recorded during the first semiannual event are highlighted in Table 2 as being suspect. The DO measurements collected during the second semiannual event were all below 5 mg/L.

For monitoring wells that were sampled using low-flow procedures, purging was considered complete when at least four of the purge parameters had stabilized. The specified stabilization criteria are +/- 0.2 standard units for pH, +/- 0.2 degrees Celsius (°C) for temperature, +/- 0.2 milligrams per liter (mg/L) for DO, +/- 0.02 Siemens per meter (S/m) for specific conductance, and +/- 20 milliVolts (mV) for ORP.

For monitoring or recovery wells purged and sampled using a submersible pump and dedicated tubing, a minimum of three well volumes were purged from the well prior to sampling. Prior to sampling, each well was gauged to determine the depth to water and the total depth of the well. This information was then used to determine the height of the water column within the well casing and the volume of water in the well casing. The abovementioned groundwater quality parameters were also measured and recorded. In the event that the groundwater parameters did not stabilize during purging, a maximum of 10 well volumes were purged from these wells prior to collecting the sample.

Samples were collected by directing the flow of water from the tubing directly into the prepared sample containers. Care was taken to not overflow the containers and potentially remove preservatives from pre-preserved containers.

Collected samples were submitted to an analytical laboratory for analyses of various constituent of concern (COCs) according to the FWGMWP and as discussed in Section 4 of this report. The appropriate containers for each set of analyses were shipped to the field by the laboratory. Sample labels were completed for each container and included the well identifier, the sample identifier, the date and time, the sampler's initials, and the analytical method(s) to be performed. Glass sample containers were placed in padded packing sleeves to prevent breakage. Sample containers were packed with ice in a shipping container. Shipping containers were sent overnight via Federal Express to the analytical laboratory.

Chain of custody forms were completed for each shipment to indicate which samples were included in that shipment and what analyses to perform for each sample. Copies of the chain of custody forms are included in Appendix C with the analytical data reports.

2.4 Equipment Decontamination Procedures

The oil/water interface probes used to gauge the PSH and water levels were decontaminated between each well. Decontamination of the probes consisted of washing the probe and the attached tape measure in a mixture of water and non-phosphate detergent (Alconox™). The equipment was then rinsed with clean water. The clean water used for washing and rinsing was obtained from the Refinery reverse osmosis water system.

The flow-through cell used for low-flow purging and sample collection was decontaminated between each well. The probes of the water parameter meters were also decontaminated between each well. Decontamination of this equipment included submersing the flow-through cell in a mixture of water and non-phosphate detergent (Alconox™) and washing the cell with a soft brush and submersing the probe end of the meters in the soapy water mixture and brushing the end of the probe with a soft brush. The equipment was then rinsed with clean water from the Refinery reverse osmosis water system.

The submersible pump used for purging and sample collection from wells where low-flow sampling procedure is not practical was decontaminated between each use. The pump was placed in a mixture of water and non-phosphate detergent (Alconox™) and allowed to run for at least one minute to flush all groundwater through the pump. The outer portions of the pump were brushed using a soft brush. The pump was then rinsed in clean water from the Refinery reverse osmosis system.

Dedicated tubing was used for sample collection from each well and thus no decontamination of sample collection tubing was required. The dedicated tubing was left in the well between sampling events, with the upper portion coiled to ensure that the lower portion did not remain in the water column. At the beginning of each sampling event, the tubing was inspected and replaced if staining or mold was noted.

2.5 Investigation Derived Waste

All purge water and decontamination liquids were contained in a portable tank in the sampling trailer. The liquids were disposed of daily in the Refinery process wastewater system upstream of the API separator by releasing the liquids into a sump designated by Refinery personnel, typically the sump beneath the north process unit flare.

Solid wastes included disposable gloves, paper towels, plastic bags, and used tubing. All solid waste was bagged and placed in the Refinery trash receptacles for later disposal.

2.6 Exceptions to Groundwater Monitoring Work Plan

Some exceptions to the planned groundwater monitoring occurred, as follows:

- As described in Section 2.1, monitoring wells MW-109 and MW-110 were installed in January 2011 as part of the AOC Group 3 CAI. Groundwater samples were collected from these wells in January 2011 as part of the AOC Group 3 CAI, then again in April and September 2011 as part of the semiannual monitoring program.

- First Semiannual Sampling Event (March to April 2011):

  - KWB-P2 was not sampled due to low water volume in the casing. This well is actually a piezometer and had less than 4 feet of water present when gauged. The well purges completely dry using either low-flow or submersible pumps.

  - NCL-34B is listed in the FWGMWP but does not exist. Therefore, no sample was collected from this well.

  - RA 314 was not sampled because the well has been removed from service and no pump or power was available. Navajo does not own this irrigation well and has no authority to require access for sample collection.

  - RW-6, RW-11 and RW-12 were not sampled because they were dry.

- Second Semiannual Sampling Event (September 2011):

  - KWB-2R and KWB-9 were gauged but were not sampled because the landowner denied access to the field crew. A sample would not have been collected from KWB-2R due to the thickness of PSH present.

  - RA-1227 was not sampled because the landowner denied access.

- KWB-P2 was not sampled due to low water volume in the casing. This well is actually a piezometer and had less than 3 feet of water present when gauged. The well purges completely dry using either low-flow or submersible pumps.

- MW-42 was not gauged or sampled because the well has been damaged.

- NCL-32 was not sampled because the well purged completely dry using low-flow pumps.

- NCL-34B is listed in the FWGMWP but does not exist. Therefore, no sample was collected from this well.

3. Regulatory Criteria

Regulatory standards used to evaluate the data collected for the groundwater monitoring program are based on the presumption that the shallow groundwater might be used as a source of drinking water. The screening level value used for each COC is the lower value of either the New Mexico Water Quality Control Commission (WQCC) standards from 20.6.2.3103 NMAC or the Maximum Contaminant Level (MCL) from the National Primary Drinking Water Standards. For COCs where neither a WQCC standard or MCL exists, the screening level value used is the NMED Tap Water Standard listed in the NMED *Risk Assessment Guidance for Site Investigations and Remediation* (NMED, 2012). For total petroleum hydrocarbons (TPH), the TPH Screening Guidelines for Potable Groundwater for unknown oil included in the NMED *Risk Assessment Guidance for Site Investigations and Remediation* has been used (NMED, 2012), as corrected by subsequent correspondence from NMED.

Table 3 lists the screening levels from each source and provides a summary of the critical groundwater screening level (CGWSL) for each COC. The CGWSL for each COC is also provided in the data summary tables, discussed later in this report.

4. Monitoring Results

Groundwater monitoring events occurred semiannually, as required by the PCC Permit and the Discharge Permit. This section describes the results of the field activities conducted according to the Workplans.

4.1 Groundwater Gauging Results

The first semiannual sampling event began on March 22, 2011 and was completed on April 15, 2011. The second semiannual sampling event began on September 6, 2011 and was completed on September 29, 2011. As discussed in Section 2, the depth to PSH (if present) and depth to water was measured in each well at the beginning of each sampling event. These measurements are summarized in Table 1.

The measurements of depth to groundwater and depth to PSH (if present) were used to construct groundwater gradient maps and PSH thickness maps for both semiannual events. For those wells where PSH is present, the groundwater elevation measurement was adjusted to determine the potentiometric surface elevation, assuming a specific gravity of 0.8 for the PSH. Plots of the groundwater elevation in each well through time have been provided at the request of OCD and are contained on CD in Appendix D.

The groundwater potentiometric surface is depicted for the first semiannual event in Figures 3 and 4 for the shallow saturated zone and for the valley fill zone, respectively. The groundwater potentiometric surface is depicted for the second semiannual event in Figures 5 and 6 for the shallow saturated zone and for the valley fill zone, respectively. As shown in these figures, the groundwater flow direction beneath the Refinery is consistently to the east, toward the Pecos River. The groundwater flow direction beneath the Evaporation Ponds is generally to the southeast.

The gradient through the Refinery is not uniform and appears to be influenced slightly by the recovery pumps, specifically in the area around RW-1 and RW-2 (northwest portion of refinery), RW-4 and RW-5 (southern portion of refinery), RW-15 (southeastern corner), MW-30 (northeast corner) during both semiannual gauging events. To the east of the Refinery, during the second semiannual gauging event, the gradient near RW-11 and RW-12 exhibits some non-uniformity. The gradient becomes more flat in the area beneath the Evaporation Ponds.

4.2 Phase-Separated Hydrocarbons

Isopleths of PSH thickness are shown in Figure 7 for the first semiannual event and in Figure 8 for the second semiannual event. As shown, there are six distinct areas where PSH is present: three separate areas in the northern portion of the Refinery (NCL, TEL and north Refinery areas), the southeastern portion of the Refinery, east of the Refinery near Bolton Road, and on the western end of the Evaporation Ponds near the former discharge point into Pond 1. Each area of interest is discussed in the following subsections. Additional information on recovery activities is provided in Section 6.

4.2.1 NCL Area

As shown in Table 1 and in Figures 7 and 8, PSH was present in NCL-34A at thickness of 5.36 and 5.87 feet during the first and second semiannual events of 2011, respectively. PSH has not historically been present in this well.

The PSH is also present south and southeast of the NCL. As shown in Table 1 and Figures 7 and 8, PSH was present in MW-67, MW-94, RW-7 and RW-8 during both semiannual events of 2011. The PSH thickness decreased between the first and second semiannual events in RW-7 and RW-8 from 2.4 to 0.93 feet in RW-7 and from 3.23 to 0.65 feet in RW-8. The PSH thickness increased in MW-67 and MW-94 between the first and second semiannual event from 1.01 to 3.27 feet in MW-67 and from 6.5 to 7.83 feet in MW-94. PSH has not historically been present in RW-7 or MW-67.

In September 2010, an increase in PSH thickness in MW-94 was observed and attributed to leaking underground piping in the area. It is possible that this leak led to the presence of PSH in NCL-34A, RW-7 and MW-67, since PSH has not been observed in these wells in the past. PSH is being recovered from MW-94, RW-7 and RW-8 routinely by bailing and/or pumping. The recovered PSH is placed in the Refinery waste oil system for recycling. The wells in this area will continue to be monitored to evaluate the effectiveness of the recovery efforts.

4.2.2 TEL Area

As shown in Table 1 and Figures 7 and 8, no PSH was measured in the actual TEL wells in either semiannual event in 2011, but PSH was measured with a thickness of 0.05 and 0.03 feet in MW-39 just northeast of well TEL-1 during the first and second

semiannual events, respectively. The measured thicknesses of PSH in MW-39 are consistent with historic data.

4.2.3 Evaporation Ponds Area

As shown in Table 1 and Figures 7 and 8, PSH is present in MW-85 and MW-86, both of which are located near the original discharge point in Evaporation Pond 1. The PSH thickness measured in March 2011 was 1.4 and 1.48 feet in MW-85 and MW-86, respectively. In September 2011, the PSH thickness was 1.43 and 1.0 feet in MW-85 and MW-86, respectively.

PSH is removed from both of these two wells routinely by bailing and is placed in the Refinery waste oil system for recycling.

4.2.4 Three Mile Ditch

As shown in Table 1 and in Figures 7 and 8, no measurable PSH was present in any wells along Three Mile Ditch during 2011.

4.2.5 North Refinery Area

As shown in Table 1 and Figures 7 and 8, PSH was present in RW-1, RW-2, MW-92, MW-97 and MW-105 in March 2011 with reported thicknesses of 0.05, 0.3, 0.05, 6.41 and 0.42 feet, respectively. In September 2011, PSH was present in RW-1, RW-2, MW-92, MW-97 and MW-105 with reported thicknesses of 0.05, 1.01, 0.86, 3.57, and 0.61 feet, respectively.

Prior to 2011, MW-92 has not contained measurable PSH. The PSH thickness measured in MW-97 showed an increase between September 2010 (2.87 feet) and March 2011 (6.41 ft). Investigations in the area did not indicate the presence of any obvious leaks.

PSH is being recovered from MW-97, RW-1 and RW-2 routinely by bailing and/or pumping. The recovered PSH is placed in the Refinery waste oil system for recycling. The wells in this area will continue to be monitored to evaluate the effectiveness of the recovery efforts.

4.2.6 South Refinery Area

As shown in Table 1 and Figures 7 and 8, PSH was present in RW-4, RW-5, RW-15, KWB-2R, KWB-4, KWB-5, KWB-6, MW-48, MW-64, MW-65 and MW-102 in March 2011 with reported thicknesses of 0.01, 1.23, 1.09, 0.02, 2.43, 0.04, 2.16, 0.25, 1.42, 3.32 and 2.47 feet, respectively. PSH was also present in RW-4, RW-5, RW-15, KWB-2R, KWB-4, KWB-5, KWB-6, MW-48, MW-64, MW-65 and MW-102 in September 2011 with reported thicknesses of 0.09, 0.75, 0.44, 0.16, 0.03, 0.04, 0.34, 0.1, 1.33, 1.87 and 2.57 feet, respectively.

In general, while the thickness of PSH in specific wells or trenches in this area has fluctuated, there has not been an overall change in the shape of this plume.

PSH is removed from this plume routinely by bailing and/or pumping. The recovered PSH is placed in the Refinery waste oil system for recycling.

4.2.7 Field East of Refinery

As shown in Table 1 and Figures 7 and 8, PSH is present in RW-13, RW-14, KWB-8 and KWB-10R in March 2011 with reported thicknesses of 1.27, 1.84, 3.59 and 0.43 feet, respectively. PSH was also present in RW-13, RW-14, KWB-8 and KWB-10R in September 2011 with reported thicknesses of 0.03, 0.06, 0.87 and 0.34 feet, respectively.

PSH is removed from this plume routinely by bailing and/or pumping, primarily from the "Chase well", which is located just east of Bolton Road. The recovered PSH is placed in the Refinery waste oil system for recycling.

5. Chemical Analytical Data

5.1 Sample Analyses

The samples collected during the first semiannual sampling event conducted in March and April 2011 and the second semiannual event conducted in September 2011 were analyzed for various COCs, according to the approved FWGMWPs dated October 2010 and June 2011. The COCs and analytical methods conducted for the first and second semiannual sampling events included the following:

- TPH Diesel Range Organics (DRO) by Method 8015 Modified;
- TPH Gasoline Range Organics (GRO) by Method 8015 Modified;
- Volatile Organic Compounds (VOCs) by Method 8260;
- Metals by Methods 6020 and 7470. The standard analyte list included analysis of arsenic, barium, chromium, iron, lead, manganese and selenium. In select wells, an additional analyte list included analysis of mercury, nickel, and vanadium;
- Cyanide by Method 4500;
- Major cations and anions (calcium, chloride, fluoride, potassium, sodium, sulfate) by Methods 6020 and 300;
- Nitrates/nitrites (as nitrogen) by Method 300;
- Total dissolved solids (TDS) by Method 2540.

Not every sample was analyzed by every method listed above. The specific analytical suite chosen for each sample was based on the October 2010 and June 2011 FWGMWPs.

The laboratory analytical reports are included in electronic format in Appendix C.

5.2 Data Validation

The analytical data were reviewed and validated following the guidelines of the PCC Permit. The data validation and a discussion of any data quality exceptions have been included on CD in Appendix E. Data qualifier flags were added to the data based on the data validation results and are included in the tabulated data presented in Appendix C.

Although some data quality exceptions were noted, the data are generally usable for the purpose intended.

5.3 Discussion of Analytical Data

The PCC Permit requires that this report include the analytical data for the current monitoring event and three prior sampling events. Because some wells are sampled semiannually, some wells are sampled annually and some wells are sampled biennially, the timeframe required to provide data for three prior sampling events varies by well. In order to simplify the data presentation, the monitoring data for 2009 through 2011 are tabulated in Appendix C for all wells sampled and for all compounds analyzed. This provides data for three prior events for the majority of the wells and at least two prior events for those wells sampled annually. The CGWSL is provided at the top of the data table and exceedances of the CGWSL are highlighted in yellow. The data are presented by well numeric order in the tables in Appendix C. The tables have been divided by major analytical group.

Table 4 provides a summary of the analytical data for the wells sampled during 2011, sorted by the area in which the well is located. Table 4 includes the following subset of the compounds analyzed:

- GRO;
- DRO;
- Total metals (arsenic, barium, chromium, iron, lead, manganese, mercury, nickel, selenium and vanadium);
- VOCs (compounds that have had at least one detected value reported above the CGWSL in more than one well);

- Cyanide;
- Major cations and anions (calcium, chloride, fluoride, potassium, sodium and sulfate); and
- Water quality parameters (TDS and nitrate/nitrite).

Data from 2009 through 2011 are provided in Table 4 in order to provide comparison to at least three prior sampling events for those wells that are sampled semiannually. The CGWSL used to evaluate the results are presented at the top of the table and concentrations of COCs that exceed the screening levels are highlighted.

As required by the Discharge Permit, historic concentrations from 2004 through 2011 of select COCs that have consistently been detected at concentrations above the groundwater screening levels in samples from wells at the site are presented in trend plots provided on a CD in Appendix D. These plots are organized by well within major areas of interest and include trend plots for the following indicator COCs:

- GRO
- DRO
- Benzene
- Ethylbenzene
- Toluene
- Total Xylenes
- Methyl-tert-butyl ether (MTBE)
- Naphthalene
- Arsenic

Appendix D also includes trend plots of water level elevations.

Figures 9 through 16 depict the extent of the groundwater screening level exceedance zones for the following major COCs for both the first and second semiannual 2011 sampling events:

- DRO
- Arsenic
- Benzene
- Naphthalene

There have been slight changes in the concentrations of COCs over time, but the general shape of the dissolved phase plumes did not change in 2011, with the exception of benzene. The concentration of dissolved phase benzene in a sample from KWB-7 was above the CGWSL, which extended the plume to the east of Bolton Road. Benzene has not been detected in samples from this well historically. The presence of benzene will be confirmed or denied during the next scheduled sampling event, which will be in March 2012.

The analytical results for 2011 are discussed in the following subsections by major area of interest.

5.3.1 NCL Area

Groundwater monitoring beneath and near the closed NCL is on-going. As shown in Table 4, concentrations of several COCs exceed the CGWSL in samples collected from wells in and near the NCL area, as discussed in the following subsections.

5.3.1.1 DRO

Samples were collected from eight wells in and near the NCL during the first semiannual sampling event and analyzed for DRO. These wells included NCL-31, NCL-33, NCL-44, NCL-49, MW-18, MW-54A, MW-54B, and MW-108. DRO concentrations in samples collected from NCL-49, MW-18 and MW-54B were below the CGWSL while the DRO concentrations from the other five samples were above the CGWSL.

Samples were collected from seven wells in and near the NCL during the second semiannual sampling event and analyzed for DRO. These wells included NCL-31,

NCL-33, NCL-44, NCL-49, MW-18, MW-54A, and MW-108. The DRO concentration in the samples collected from NCL-31, NCL-44, NCL-49 and MW-18 were below the CGWSL while the DRO concentrations in the other three samples were above the CGWSL.

Concentrations in individual wells fluctuate slightly between sampling events, but demonstrate an overall stable trend.

5.3.1.2 VOCs

Samples were collected from eight wells in and near the NCL and analyzed for VOCs during the first semiannual sampling event. These wells included NCL-31, NCL-33, NCL-44, NCL-49, MW-18, MW-54A, MW-54B, and MW-108. Benzene and 1,2,4-Trimethlybenzene concentrations exceed the CGWSLs in the sample collected from MW-108. The concentrations for benzene and 1,2,4-trimethlybenzene are below the CGWSLs in samples from all of the other wells in and near the NCL area.

Samples were collected from seven wells in and near the NCL during the second semiannual sampling event and analyzed for VOCs. These wells included NCL-31, NCL-33, NCL-44, NCL-49, MW-18, MW-54A, and MW-108. Benzene and 1,2,4-trimethlybenzene concentrations exceed the CGWSLs in the sample collected from MW-108. The concentration of benzene and 1,2,4-trimethlybenzene are below the CGWSLs in samples from all of the other wells in and near the NCL area.

The concentrations of VOCs fluctuate between sampling events but demonstrate an overall stable trend.

5.3.1.3 Total Metals

The same samples collected from wells in and near the NCL during the first and second semiannual events that were analyzed for DRO were also analyzed for the standard analyte list for total metals identified in Section 5.1 (arsenic, barium, chromium, iron, lead, manganese and selenium). Additionally, well MW-18 was sampled for the additional analyte list for total metals identified in Section 5.1 (mercury, nickel and vanadium) during both semiannual events. Well NCL-31 was inadvertently sampled for nickel and vanadium during the first semiannual event and the results have been included in the Table 4.

No exceedances of the CGWSL were present in any of the samples collected from the wells in and near the NCL in 2011 for barium, chromium, lead, mercury, nickel, selenium or vanadium. There were exceedances of the CGWSL for arsenic, iron and manganese as follows:

- The reported concentration of arsenic exceeded the CGWSL in samples collected from well NCL-44 during both the first and second semiannual events.

- The reported concentrations of iron exceeded the CGWSL in samples collected from NCL-33 and NCL-44 during both the first and second semiannual events.

- The reported concentrations of manganese exceeded the CGWSL in samples collected from wells NCL-31, NCL-44 and MW-54A during both the first and second semiannual events.

5.3.1.4 Water Quality Parameters

Concentrations of chloride, fluoride, sulfate and TDS exceed the respective CGWSL in samples from various wells in and near the NCL. The reported concentrations of these constituents exhibit an overall stable trend, except for the TDS concentrations in samples from MW-108 which appear to be increasing slightly.

5.3.2 TEL Area

Groundwater monitoring beneath the closed TEL impoundment is ongoing. Samples were collected from the four TEL wells (TEL-1, TEL-2, TEL-3 and TEL-4) during both semiannual monitoring events. As shown in Table 4, concentrations of several COCs exceed the CGWSL in samples collected from the TEL wells, as discussed in the following subsections.

5.3.2.1 GRO

GRO was reported above detection limits in samples from all four of the TEL wells. The NMED TPH guidance document does not provide a screening value for GRO, but indicates that individual VOCs should be analyzed. The reported concentrations of GRO fluctuate through time, but in general show a declining trend over the past three years in samples from TEL-1, TEL-3 and TEL-4. The reported concentrations of GRO appear to be stable in samples from TEL-2.

5.3.2.2 DRO

Reported concentrations for DRO exceed the CGWSL in samples from all four of the TEL wells. Concentrations in samples from individual wells fluctuate between sampling events, but demonstrate an overall stable to slightly declining trend.

5.3.2.3 VOCs

Various VOCs were detected in samples from the four TEL wells at concentrations above the respective CGWSLs, as follows:

- Benzene was not detected in the samples collected from TEL-1. Benzene concentrations reported for samples collected from TEL-2, TEL-3 and TEL-4 exceeded the CGWSL.

- 1,2,4-Trimethylbenzene was not detected in the samples collected from TEL-1. 1,2,4-Trimethylbenzene was reported at concentrations above the CGWSL for samples collected from TEL-2, TEL-3, and TEL-4.

- MTBE was either not detected or was detected at concentrations below the CGWSL in the samples collected from the TEL-1, TEL-2, and TEL-3. The reported concentrations of MTBE in the samples collected from TEL-4 were above the CGWSL.

5.3.2.4 Total Metals

Samples were collected from the four TEL wells and analyzed for the standard metals analyte list identified in Section 5.1 including: arsenic, barium, chromium, iron, lead, manganese, mercury, and selenium.

No exceedances of the CGWSL have been reported during the past three years for barium, iron, lead, mercury, or selenium in samples from any of the four TEL wells. No exceedances of the CGWSL were reported for arsenic in 2011. The reported concentration of manganese was above the CGWSL in the sample collected from TEL-4 during the first semiannual event but below the CGWSL for samples from the other three TEL wells. The reported concentrations of chromium and manganese were above the CGWSL in the sample collected from TEL-4 during the second semiannual event but were below the CGWSL for samples from the other three TEL wells. The chromium and manganese concentrations reported for the samples from TEL-4 collected in the first and second semiannual events were similar to concentrations

reported for previous samples from this well but the concentrations appear to be fluctuating.

5.3.2.5 Water Quality Parameters

Concentrations of chloride, fluoride, sulfate and TDS exceed the respective CGWSL in samples from various wells in the TEL area. The reported concentrations of these constituents exhibit an overall stable trend except for slight increases in fluoride concentrations observed in samples from TEL-3 and TEL-4 over the past three years.

5.3.3 Evaporation Ponds

Groundwater monitoring beneath the inactive former Evaporation Ponds is ongoing. As shown in Table 4, concentrations of several COCs exceed the CGWSL in samples collected from the Evaporation Ponds wells, as discussed in the following subsections.

5.3.3.1 GRO

Samples were collected from 43 wells in and around the Evaporation Ponds and analyzed for GRO during the first semiannual sampling event. These wells included MW-2A, MW-3, MW-4A, MW-4B, MW-5A, MW-5B, MW-6A, MW-6B, MW-7A, MW-7B, MW-10, MW-11A, MW-11B, MW-15, MW-18B, MW-22A, MW-22B, MW-70, MW-72, MW-73, MW-74, MW-75, MW-76, MW-77, MW-78, MW-79, MW-80, MW-81, MW-82, MW-83, MW-84, MW-87, MW-88, OCD-1R, OCD-2A, OCD-3, OCD-4, OCD-5, OCD-6, OCD-7A, OCD-7B, OCD-8A, and OCD-8B. GRO concentrations were above detection limits in samples collected from 27 of the 43 wells.

Samples were collected from 27 wells in and around the Evaporation Ponds and analyzed for GRO during the second semiannual sampling event. These wells included MW-2A, MW-3, MW-4A, MW-5A, MW-7A, MW-10, MW-22A, MW-70, MW-72, MW-73, MW-74, MW-75, MW-76, MW-77, MW-79, MW-83, MW-84, MW-87, MW-88, OCD-1R, OCD-2A, OCD-3, OCD-4, OCD-5, OCD-6, OCD-7A, and OCD-8A. GRO concentrations were above detection limits in samples collected from 20 of the 27 wells.

The NMED TPH guidance document does not provide a screening value for GRO, but indicates that individual VOCs should be analyzed. The reported concentrations of GRO fluctuate through time, but in general show a stable or decreasing trend over the past three years.

5.3.3.2 DRO

Samples were collected from 45 wells in and around the Evaporation Ponds and analyzed for DRO during the first semiannual sampling event. These wells in included MW-1R, MW-2A, MW-3, MW-4A, MW-4B, MW-5A, MW-5B, MW-6A, MW-6B, MW-7A, MW-7B, MW-10, MW-11A, MW-11B, MW-15, MW-18A, MW-18B, MW-22A, MW-22B, MW-70, MW-72, MW-73, MW-74, MW-75, MW-76, MW-77, MW-78, MW-79, MW-80, MW-81, MW-82, MW-83, MW-84, MW-87, MW-88, OCD-1R, OCD-2A, OCD-3, OCD-4, OCD-5, OCD-6, OCD-7A, OCD-7B, OCD-8A and OCD-8B. The reported DRO concentrations were above the CGWSL in 31 of the samples collected from these 45 wells.

Samples were collected from 28 wells in and around the Evaporation Ponds and analyzed for DRO during the second semiannual sampling event. These wells in included MW-2A, MW-3, MW-4A, MW-5A, MW-7A, MW-10, MW-18A, MW-22A, MW-70, MW-72, MW-73, MW-74, MW-75, MW-76, MW-77, MW-79, MW-83, MW-84, MW-87, MW-88, OCD-1R, OCD-2A, OCD-3, OCD-4, OCD-5, OCD-6, OCD-7A and OCD-8A. The reported DRO concentrations were above the CGWSL in 19 of the samples collected from these 28 wells.

In general, the DRO concentrations in the groundwater samples in the Evaporation Ponds area exhibit a stable or declining trend.

5.3.3.3 VOCs

Samples collected from the 45 wells in and around the Evaporation Ponds during the first semiannual event that were analyzed for DRO were also analyzed for VOCs. Samples collected from the 28 wells in and around the Evaporation Ponds during the second semiannual event that were analyzed for DRO were also analyzed for VOCs.

Benzene is the only VOC reported at concentrations above the CGWSL in samples collected from wells in and near the Evaporation Ponds. Benzene concentrations exceeded the CGWSL in samples collected from MW-15 during the first semiannual event and from MW-77 during the second semiannual event. Benzene concentrations exceeded the CGWSL in samples collected previously from MW-78 and MW-83 but benzene was not detected in the samples collected from these wells in 2011.

No VOCs were detected in any of the samples collected during 2011 from nine wells completed in the underlying valley fill zone in the Evaporation Ponds area.

5.3.3.4 Total Metals

Samples collected from the 45 wells in and around the Evaporation Ponds during the first semiannual event that were analyzed for DRO were also analyzed for the standard analyte list for total metals identified in Section 5.1 (arsenic, barium, chromium, iron, lead, manganese and selenium). During the first semiannual event, three wells, including MW-18A, MW-77, and OCD-8A, were sampled for the additional analyte list for total metals identified in Section 5.1 (mercury, nickel and vanadium).

Samples collected from the 28 wells in and around the Evaporation Ponds during the second semiannual event that were analyzed for DRO were analyzed the standard analyte list for total metals. During the second semiannual event three wells, including MW-18A, MW-77, OCD-8A, were sampled for the additional analyte list for total metals (mercury, nickel and vanadium).

No exceedances of the CGWSL were present in any of the samples collected from the wells in and near the Evaporation Ponds in 2011 for barium, chromium, lead, mercury, nickel, selenium or vanadium. There were exceedances of the CGWSL for arsenic, iron and manganese as follows:

- For the first semiannual sampling event, arsenic concentrations were above the CGWSL in samples collected from 22 of the 45 wells in and near the Evaporation Ponds. For the second semiannual sampling event, arsenic concentrations were above the CGWSL in samples collected from 16 of the 28 wells in and near the Evaporation Ponds.

- For the first semiannual sampling event, iron concentrations were above the CGWSL in samples collected from 28 of the 45 wells in and near the Evaporation Ponds. For the second semiannual sampling event, iron concentrations were above the CGWSL in samples collected from 21 of the 28 wells in and near the Evaporation Ponds.

- For the first semiannual sampling event, manganese concentrations were above the CGWSL in samples collected from 41 of the 45 wells in and near the Evaporation Ponds. For the second semiannual sampling event, manganese concentrations were above the CGWSL in samples collected from 27 of the 28 wells in and near the Evaporation Ponds.

5.3.3.5 Cyanide

Samples collected from three select wells (MW-18A, MW-77 and OCD-8A) in and downgradient from the Evaporation Ponds were analyzed for cyanide. No detectable concentrations of cyanide were present in the samples collected from these wells.

5.3.3.6 Water Quality Parameters

Samples collected from the 45 wells in and around the Evaporation Ponds during the first semiannual event that were analyzed for DRO were also analyzed for water quality parameters. During the second semiannual event, samples collected from 15 of the 28 wells in and around the Evaporation Ponds that were analyzed for DRO were also analyzed for water quality parameters. These wells included MW-2A, MW-3, MW-4A, MW-5A, MW-7A, MW-10, MW-18A, MW-72, MW-73, MW-74, MW-75, MW-76, MW-77, MW-79 and MW-83.

Concentrations of chloride, fluoride, sulfate and TDS exceed the respective CGWSL in various wells in and around the Evaporation Ponds. The reported concentrations of these constituents exhibit an overall stable trend.

5.3.4 Three Mile Ditch

Groundwater monitoring along the inactive, backfilled Three Mile Ditch is ongoing. As shown in Table 4, concentrations of several COCs exceed the CGWSL in samples collected from the Three Mile Ditch wells, as discussed in the following subsections.

5.3.4.1 GRO

Samples were collected from wells MW-8 and MW-21 along Three Mile Ditch and analyzed for GRO during the first and second semiannual event. GRO was not detected above the laboratory detection limit for any of the samples collected from these wells during either sampling event.

5.3.4.2 DRO

Samples were collected from 10 wells along Three Mile Ditch and analyzed for DRO during the first semiannual sampling event. These wells included MW-8, MW-16, MW-20, MW-21, MW-25, MW-26, MW-27, MW-68, MW-71 and MW-89. Samples were collected from three wells along Three Mile Ditch and analyzed for DRO during the second semiannual sampling event. These wells included MW-8, MW-21 and MW-71.

DRO was not detected above the CGWSL in any samples collected from wells along Three Mile Ditch. The only reported detection of DRO above the laboratory detection limit was in the sample collected from MW-89 in April 2011.

During the April 2011 sampling event, the reported concentration of DRO in the sample collected from MW-26 exceeded the CGWSL. This detection appears to be an anomaly because DRO was not detected in the sample from MW-26 during the April 2011 event.

5.3.4.3 VOCs

The same samples collected from wells along Three Mile Ditch that were analyzed for DRO were also analyzed for VOCs. In addition, the samples collected from NP-1 during both semiannual sampling events and from NP-6 during the first semiannual sampling event were analyzed for VOCs.

MTBE is the only VOC reported at concentrations above the CGWSL in samples collected from wells along Three Mile Ditch. The reported MTBE concentration exceeded the CGWSL in the sample collected from NP-1 in April 2011, but was below the CGWSL in the sample collected from NP-1 in September 2011. The MTBE concentration in this well has been stable since 2009. MTBE has not been detected at concentrations exceeding the CGWSL in any of the samples collected from other wells along Three Mile Ditch.

5.3.4.4 Total Metals

The same samples collected from wells along Three Mile Ditch during the first and second semiannual events that were analyzed for DRO were also analyzed for the standard analyte list for total metals identified in Section 5.1 (arsenic, barium, chromium, iron, lead, manganese and selenium). Additionally, wells MW-21 and MW-71 were sampled for the additional analyte list for total metals identified in Section 5.1 (mercury, nickel and vanadium) during the first semiannual event. Well MW-71 was also sampled for the additional analyte list during the second semiannual event.

No exceedances of the CGWSL were present in any of the samples collected from the wells along Three Mile Ditch in 2011 for arsenic, barium, chromium, lead, mercury, nickel, or vanadium. The reported concentrations of two metals were above the CGWSL, as follows:

- The reported concentrations of manganese exceeded the CGWSL in samples from wells MW-8 and MW-21 during both the first and second semiannual event. The reported concentration of manganese in the sample from well MW-89 exceeded the CGWSL in April 2011. The concentration of manganese has been stable in MW-8 and MW-21 since October 2010 (when analysis of manganese began). Samples from MW-89 have not previously been analyzed for manganese.

- The concentration of selenium reported in the sample collected from well MW-21 during September 2011 exceeded the CGWSL; however all other reported concentrations of selenium in samples collected from wells along Three Mile Ditch were below the CGWSL. The concentration of selenium in samples collected from MW-21 show an increasing trend over the past three years.

5.3.4.5 Cyanide

Samples collected from well MW-71 were analyzed for cyanide. Cyanide was not detected in the samples collected from this well.

5.3.4.6 Water Quality Parameters

The same samples collected from wells along Three Mile Ditch that were analyzed for DRO were also analyzed for water quality parameters. Additionally, NP-1 was analyzed for water quality parameters during the first semiannual event. Concentrations of chloride, fluoride, sulfate and TDS exceed the respective CGWSL in various wells along Three Mile Ditch. The reported concentrations of these constituents exhibit an overall stable trend.

5.3.5 North Refinery Area

Groundwater monitoring in the northern portion of the active Refinery is ongoing. As shown in Table 4, concentrations of several COCs exceed the CGWSL in samples collected from the northern portion of the Refinery, as discussed in the following subsections.

5.3.5.1 GRO

Samples were collected from 19 wells in the north Refinery area and analyzed for GRO during the first semiannual sampling event. These wells included MW-23, MW-29, MW-40, MW-41, MW-42, MW-43, MW-55, MW-59, MW-60, MW-61, MW-62, MW-90,

MW-91, MW-93, MW-95, MW-96, MW-98, RW-9 and RW-10. GRO was detected in 17 of the 19 samples.

Samples were collected from 13 wells in the north Refinery area and analyzed for GRO during the second semiannual sampling event. These wells included MW-23, MW-29, MW-41, MW-43, MW-55, MW-60, MW-61, MW-62, MW-90, MW-91, MW-93, MW-96 and MW-98. GRO was detected in 11 of the 13 samples.

The NMED TPH guidance document does not provide a screening value for GRO, but indicates that individual VOCs should be analyzed. The reported concentrations of GRO fluctuate through time in samples from most of the wells in this area. In general, the GRO concentrations show a stable to declining trend over the past three years, with the exception of the concentrations in samples from MW-23, MW-42, MW-60 and MW-67, which appear to be increasing slightly.

5.3.5.2 DRO

Samples were collected from 22 wells in the north Refinery area and analyzed for DRO during the first semiannual sampling event. These wells included MW-23, MW-29, MW-40, MW-41, MW-42, MW-43, MW-45, MW-46R, MW-55, MW-56, MW-59, MW-60, MW-61, MW-62, MW-90, MW-91, MW-93, MW-95, MW-96, MW-98, RW-9, and RW-10. DRO concentrations were reported above the CGWSL in 16 of the 22 samples.

Samples were collected from 16 wells in the north Refinery area and analyzed for DRO during the second semiannual sampling event. These wells included MW-23, MW-29, MW-41, MW-43, MW-45, MW-46R, MW-55, MW-56, MW-60, MW-61, MW-62, MW-90, MW-91, MW-93, MW-96, and MW-98. DRO concentrations were reported above the CGWSL in 11 of the 16 samples.

The DRO concentrations in groundwater samples from the north Refinery area show a generally decreasing trend over the past three years.

5.3.5.3 VOCs

The same samples collected from wells in the north Refinery area that were analyzed for DRO were also analyzed for VOCs. Various VOCs are present above the CGWSLs, as follows:

- 1,2,4-Trimethylbenzene is present above the CGWSL in the sample collected during the first semiannual event from well MW-42; no sample was collected

from this well during the second semiannual event. 1,2,4-Trimethylbenzene is present above the CGWSL in samples collected during the first and second semiannual events from wells MW-23, MW-43, MW-61, MW-62, MW-91, MW-93, MW-98.

- Benzene is present above the CGWSL in the samples collected during the first semiannual event from wells MW-42, MW-59 and RW-9; no samples were collected from these wells during the second semiannual event. Benzene is present above the CGWSL in samples collected during the first and second semiannual events from wells MW-23, MW-41, MW-43, MW-60, MW-61, MW-62, MW-90, MW-91, MW-93 and MW-98.

- Ethlybenzene is present above the CGWSL in sample collected during the first semiannual event from well MW-23; ethylbenzene was detected in the sample from this well at a concentration less than the CGWSL during the second semiannual event. Ethlybenzene is present above the CGWSL in samples collected during the first and second semiannual events in the samples from wells MW-91 and MW-98.

- MTBE is present above the CGWSL in samples collected during the first and second semiannual events from well MW-96.

- Naphthalene is present above the CGWSL in samples collected during the first and second semiannual events from wells MW-23, MW-61, MW-91, MW-93 and MW-98. Naphthalene was not detected above the CGWSL in the sample collected from well MW-62 during the first semiannual event but was detected above the CGWSL in the sample collected during the second semiannual events.

- Total xylenes is present above the CGWSL in samples collected during the first and second semiannual events from wells MW-91 and MW-98.

The reported concentrations of VOCs have fluctuated over time, but in general do not show an increasing trend in groundwater samples from most of the wells in this area over the past three years, with the exception of the concentrations in samples from wells MW-23, MW-42 and MW-67.

5.3.5.4 Total Metals

The same samples collected from wells in the north Refinery area during the first and second semiannual events that were analyzed for DRO were also analyzed for the standard analyte list for total metals identified in Section 5.1 (arsenic, barium, chromium, iron, lead, manganese and selenium). Additionally, wells MW-43, MW-45, MW-55 and MW-60 were sampled for the additional analyte list for total metals identified in Section 5.1 (mercury, nickel and vanadium) during the first and second semiannual events. A field duplicate collected from MW-56 during the first semiannual event was inadvertently analyzed for nickel and vanadium.

No exceedances of the CGWSL were present in any of the samples collected from the wells along in the north Refinery in 2011 for chromium, mercury, nickel, selenium or vanadium. The following total metals are present above the CGWSLs, as follows:

- The arsenic concentration in the sample collected from MW-59 during the first semiannual event exceeded the CGWSL; a sample was not collected from this well during the second semiannual event. Due to matrix interferences, the detection limit exceeded the arsenic CGWSL in several samples.

- The barium concentrations in the samples collected from MW-23 during the first and second semiannual events exceeded the CGWSL. The barium concentration in the sample collected from well MW-43 during the first semiannual event did not exceed the CGSWL but the barium concentration in the sample collected during the second semiannual event did exceed the CGWSL.

- The iron concentrations in the samples collected from RW-10 during the first and second semiannual events exceeded the CGWSL.

- The lead concentration in the sample collected from MW-23 during the first semiannual event exceeded the CGWSL. Lead was not detected above the reporting limit in the sample collected from MW-23 during the second semiannual sampling event but, due to matrix interference, the detection limit for this sample was above the CGWSL. The detection limit exceeded the lead CGWSL in several samples due to matrix interference.

- Manganese concentrations exceeded the CGWSL in the samples collected during the first semiannual event from wells MW-42, MW-59,

RW-9 and RW-10; no samples were collected from these wells during the second semiannual event. Manganese concentrations in the samples collected during the first and second semiannual events from wells MW-29, MW-41, MW-43, MW-45, MW-56 and MW-60 exceeded the CGWSL.

5.3.5.5 Cyanide

Samples collected from select wells (MW-43, MW-45, MW-55, and MW-60) were analyzed for cyanide. Cyanide was not detected in the samples collected from these wells.

5.3.5.6 Water Quality Parameters

Concentrations of chloride, fluoride, sulfate and TDS exceed the respective CGWSL in various wells in the north Refinery area. The reported concentrations of these constituents exhibit an overall stable or declining trend.

5.3.6 South Refinery Area

Groundwater monitoring in the southern portion of the active Refinery is ongoing. As shown in Table 4, concentrations of several COCs exceed the CGWSL in samples collected from the southern portion of the Refinery, as discussed in the following subsections.

As previously noted, wells MW-109 and MW-110 were installed in January 2011 in the south Refinery as part of the AOC Group 3 Corrective Action Investigation. These wells were sampled in January, April and September 2011 and the results of all these events have been included in Table 4 and discussed in the following sections.

5.3.6.1 GRO

Samples were collected from MW-109 and MW-110 in January 2011 and analyzed for GRO. Concentrations of GRO in both samples were reported above the detection limit.

Samples were collected from 13 wells in the south Refinery area and analyzed for GRO during the first semiannual sampling event. These wells included MW-28, MW-49, MW-52, MW-57, MW-66, MW-99, MW-101, MW-103, MW-104, MW-106, MW-107, MW-109 and MW-110. GRO was detected in 11 of the 13 samples.

Samples were collected from 12 wells in the south Refinery area and analyze for GRO during the second semiannual sampling event. These wells included MW-28, MW-49, MW-52, MW-57, MW-66, MW-99, MW-101, MW-104, MW-106, MW-107, MW-109 and MW-110. GRO was detected in 11 of the 12 samples.

The NMED TPH guidance document does not provide a screening value for GRO, but indicates that individual VOCs should be analyzed. The reported concentrations of GRO fluctuate through time, but in general show a stable to declining trend over the past three years, with the exception of the concentrations in MW-52 which appear to be increasing.

5.3.6.2 DRO

In January 2011, samples were collected from MW-109 and MW-110 and analyzed for DRO. The DRO concentration detected in both samples was above the CGWSL.

Samples were collected from 17 wells in the south Refinery area and analyzed for DRO during the first semiannual sampling event. These wells included KWB-2R, MW-28, MW-49, MW-50, MW-52, MW-57, MW-58, MW-66, MW-99, MW-101, MW-103, MW-104, MW-106, MW-107, MW-109, MW-110 and RW-4. DRO concentrations were reported above the CGWSL in 14 of the 17 samples.

Samples were collected from 14 wells in the south Refinery area and analyzed for DRO during the second semiannual sampling event. These wells included MW-28, MW-49, MW-50, MW-52, MW-57, MW-58, MW-66, MW-99, MW-101, MW-104, MW-106, MW-107, MW-109 and MW-110. DRO concentrations were reported above the CGWSL in eight of the 14 samples.

Although the concentration of DRO in KWB-2R increased between October 2010 and April 2011, DRO concentrations in the south Refinery area show a generally stable or decreasing trend over the past three years.

5.3.6.3 VOCs

The same samples collected from wells in the south Refinery area that were analyzed for DRO were also analyzed for VOCs. In addition, samples were collected from two irrigation wells, RA-313 and RA-1227, located near the southeastern portion of the Refinery and analyzed for VOCs during the first semiannual event. Various VOCs are present above the CGWSLs, as follows:

- 1,2,4-Trimethylbenzene is present at a concentration above the CGWSL in the sample collected from KWB-2R during the first semiannual event; no sample was collected during the second semiannual event. 1,2,4-Trimethylbenzene was present above the CGWSL in the samples collected during the first and second semiannual events from wells MW-49, MW-99, MW-106, MW-107, MW-109 and MW-110. Additionally, 1,2,4-trimethylbenzene was detected above the CGWSL in samples collected from MW-109 and MW-110 in January 2011.

- Benzene is present at a concentration above the CGWSL in the samples collected from wells KWB-2R, MW-103 and RW-4 during the first semiannual event; no samples were collected during the second semiannual event. Benzene was present at a concentration above the CGWSL in the samples collected during the first and second semiannual events from wells MW-28, MW-49, MW-58, MW-66, MW-99, MW-101, MW-104, MW-106, MW-107, MW-109 and MW-110. Additionally, benzene was detected above the CGWSL in samples collected from MW-109 and MW-110 in January 2011.

- Ethylbenzene is present at a concentration above the CGWSL in samples collected from MW-109 and MW-110 in January 2011 but ethylbenzene was not detected above the CGWSL in samples from either well during the first or second semiannual events. Ethylbenzene is present at a concentration above the CGWSL in samples collected during the first semiannual event from wells KWB-2R, MW-106 and MW-107. Ethylbenzene was not detected above the CGWSL in samples collected during the second semiannual event from wells MW-106 and MW-107; no sample was collected from well KWB-2R during the second semiannual event.

- MTBE is present at concentrations above the CGWSL in the samples collected from wells MW-107 and RW-4 during the first semiannual event; no samples were collected during the second semiannual event. MTBE is present at a concentration above the CGWSL in samples collected during the first and second semiannual events from wells MW-28, MW-58, MW-66 and MW-99.

- Naphthalene concentrations exceeded the CGWSL in samples collected from MW-109 and MW-110 in January 2011 but was not detected above the CGWSL in MW-109 in the subsequent semiannual events. Naphthalene concentrations exceeded the CGWSL in samples collected during the first semiannual event from wells KWB-2R, MW-107 and MW-110. Naphthalene was not detected above the CGWSL in samples collected during the second

semiannual event from wells MW-107 and MW-110; no sample was collected from well KWB-2R during the second semiannual event. Naphthalene concentration exceeded the CGWSL in samples collected during the first and second semiannual events from wells MW-66 and MW-106.

- Total xylenes concentrations exceeded the CGWSL in the sample collected from KWB-2R during the first semiannual event; no sample was collected during the second semiannual event.

The reported concentrations of VOCs have fluctuated over time, but in general do not show an increasing trend over the past three years with the exception of KWB-2R, RW-4 and concentrations of MTBE in MW-58.

5.3.6.4 Total Metals

The same samples collected from wells in the south Refinery area during the first and second semiannual events that were analyzed for DRO were also analyzed for the standard analyte list for total metals identified in Section 5.1 (arsenic, barium, chromium, iron, lead, manganese and selenium). Additionally, wells MW-28, MW-49, MW-52, MW-58 and MW-66 were sampled for the additional analyte list for total metals identified in Section 5.1 (mercury, nickel and vanadium) during the first and second semiannual events.

No reported concentrations exceeded of the CGWSL for chromium, mercury, nickel, selenium or vanadium in any of the samples collected from the south Refinery area. The following total metals are present above the CGWSLs, as follows:

- Arsenic concentrations exceeded the CGWSL in samples collected during the first and second semiannual events from wells MW-58 and MW-109. Arsenic was not detected in samples collected from wells MW-101 and MW-110 during the first semiannual event but exceeded the CGWSL during the second semiannual event. Due to matrix interferences, the detection limit exceeded the arsenic CGWSL in several samples including those collected from MW-101 and MW-110 during the first semiannual event.

- Barium concentrations exceeded the CGWSL in samples collected from MW-66 and MW-107 during the first and second semiannual events.

- The iron concentration in the sample collected from KWB-2R during the first semiannual event exceeded the CGWSL; a sample was not collected from this well during the second semiannual event. Iron concentrations exceeded the CGWSL in samples collected during the first and second semiannual event from wells MW-58, MW-101, MW-107, MW-109 and MW-110. Iron was not detected in the sample collected from well MW-99 during the first semiannual event but exceeded the CGWSL during the second semiannual event.

- The lead concentration in the sample collected from KWB-2R during the first semiannual event exceeded the CGWSL; a sample was not collected from this well during the second semiannual event. Due to matrix interferences, the detection limit exceeded the lead CGWSL in several samples.

- Manganese concentrations exceeded the CGWSL in samples collected during the first semiannual event from wells KWB-2R and MW-57. Manganese was not detected above the CGWSL in the sample collected during the second semiannual event from MW-57; no sample was collected from well KWB-2R during the second semiannual event. Manganese concentrations exceeded the CGWSL in samples collected during the first and second semiannual event from wells MW-28, MW-49, MW-50, MW-58, MW-66, MW-99, MW-101, MW-107, MW-109 and MW-110.

5.3.6.5 Cyanide

Samples collected from select wells (MW-28, MW-49, MW-52, MW-58 and MW-66) were analyzed for cyanide. Cyanide was not detected in the samples collected from these wells.

5.3.6.6 Water Quality Parameters

Concentrations of chloride, fluoride, sulfate and TDS exceed the respective CGWSL in various wells in the south Refinery area. The reported concentrations of these constituents exhibit an overall stable or declining trend.

5.3.7 Field East of Refinery

Groundwater monitoring in the field east of the Refinery, between the Refinery and the Evaporation Ponds, is ongoing. As shown in Table 4, concentrations of several COCs exceed the CGWSL in samples collected from the field east of the Refinery, as discussed in the following subsections.

5.3.7.1 GRO

Samples collected during the first and second semiannual events from wells KWB-11A, KWB-11B and KWB-12B were analyzed for GRO. A sample was collected during the second semiannual event and analyzed for GRO from well KWB-12A; a sample was not collected from this well during the first semiannual event. GRO was not detected in any of these samples.

5.3.7.2 DRO

Samples were collected from seven wells in the field east of the Refinery and analyzed for DRO during the first semiannual sampling event. These wells included KWB-1A, KWB-3AR, KWB-7, KWB-9, KWB-11A, KWB-11B and KWB-12B. DRO was detected at a concentration below the CGWSL in KWB-7 and was not detected above the detection limit in samples collected from the other wells.

Samples were collected from six wells in the field east of the Refinery and analyzed for DRO during the second semiannual sampling event. These wells included KWB-1A, KWB-7, KWB-11A, KWB-11B, KWB-12A and KWB-12B. DRO was not detected in any of the samples.

5.3.7.3 VOCs

The same samples collected from wells in the field east of the Refinery that were analyzed for DRO were also analyzed for VOCs during both of the semiannual sampling events. In addition, samples were collected from two irrigation wells (RA-4196 and RA-4798) located in the field east of the Refinery during both sampling events and were analyzed for VOCs.

The only VOC concentration reported above the CGWSL was benzene in the sample collected from recovery well KWB-7 during the second semiannual event. Benzene has not been detected in this well during the past three years and the detection during

the second semiannual event may be an anomaly. All other VOCs were either not detected or were detected at concentrations below the CGWSLs.

5.3.7.4 Total Metals

The same samples collected from wells in the field east of the Refinery that were analyzed for DRO were also analyzed for the standard and additional analyte lists for total metals identified in Section 5.1 during both of the semiannual sampling events. No reported concentrations exceeded the CGWSLs for arsenic, barium, chromium, iron, lead, mercury, nickel, selenium or vanadium in any of the samples collected from wells in the field east of the Refinery during 2011.

Manganese was detected at concentrations exceeding the CGWSL in samples collected from wells KWB-1A and KWB-7 during the first and second semiannual events. The concentration of manganese in these wells appears to be stable over the past three years.

5.3.7.5 Cyanide

Samples collected from select wells (KWB-1A, KWB-3AR, KWB-7, KWB-9, KWB-11A, KWB-11B, KWB-12A and KWB-12B) were analyzed for cyanide. Cyanide was not detected in the samples collected from these wells.

5.3.7.6 Water Quality Parameters

Concentrations of chloride, sulfate and TDS exceed the respective CGWSL in various wells in the field east of the Refinery. The reported concentrations of these constituents exhibit an overall stable or declining trend.

5.3.8 Crossgradient and Upgradient Areas

Groundwater monitoring is ongoing in areas both crossgradient to and upgradient from the Refinery. The crossgradient wells include KWB-13 located south of the Refinery, NP-5 located across Eagle Draw to the north of the Refinery and RA-3156 located southeast of the Refinery. Upgradient wells include MW-53, UG-1, UG-2 and UG-3R.

Table 4 shows the analytical results for samples collected from these wells. DRO and manganese were detected at concentrations above the CGWSL in the sample collected from upgradient well MW-53 during the first semiannual event. No sample was collected from this well during the second semiannual event. DRO has not been

detected in samples from MW-53 during the last three years and samples from MW-53 have not been analyzed for manganese in the last three years. These exceedances will be evaluated in future monitoring events.

Sulfate and TDS are present at concentrations exceeding CGWSLs in all of the samples collected from crossgradient and upgradient wells in 2011. Chloride and fluoride are present above the CGWSL in the sample collected from NP-5.

5.4 Reverse Osmosis Reject Water

Navajo sends the reject water from the reverse osmosis (RO) system to a nearby agricultural field to be used as irrigation water.

Samples of the RO reject water are collected and analyzed quarterly for metals and water quality parameters. The analytical results for the RO reject water are summarized in Table 5. The full laboratory analytical reports for the RO reject water are provided in Appendix C.

Chloride, fluoride, nitrate/nitrite and sulfate were reported at concentrations above the CGWSLs.

6. Remediation System Monitoring

The PCC Permit, the Discharge Permit and the FWGMWP include requirements that PSH present in the shallow groundwater within and adjacent to the Refinery be recovered, where present. A system of recovery trenches and recovery wells has been installed in the Refinery and is used to recover PSH. During 2011, a preliminary design for upgrading the recovery system was developed, which included new pumps, separate water and PSH piping from each trench, and routing of PSH to a product recovery tank instead of through the API separator. The conceptual design was submitted to NMED and OCD in January 2011 (ARCADIS, 2011a). Final design of the upgraded system was completed in 2011 and construction of the upgrades began in December 2011. Construction of the upgrades is expected to be completed during the first quarter of 2012 and the system will begin operation during the first half of 2012.

During 2011, recovery of PSH was accomplished by a dedicated technician, who monitored the trenches and recovery wells approximately every week to document if PSH was present. Pumps in RW-1, RW-2, RW-4, RW-5, RW-6, RW-7, RW-8, RW-15, KWB-8 and the "Chase well" are operated manually when PSH is detected. Dedicated pumps are not present in RW-9 or RW-10. When PSH is present in these locations, it is removed via a portable electric pump or via a hand bailer. Dedicated pumps were present in RW-12, RW-13, and RW-14; however, these pumps were not operable during 2011 due to mechanical failure. A summary of the recovered water and PSH from the recovery trench system is presented in Table 6 and the operation records are contained in Appendix F.

PSH removed from RW-4, RW-5 and RW-6 is placed into dedicated tanks located adjacent to each of these recovery trenches, then transported via truck to the refinery's crude oil tanks. Total fluids removed from the Chase well are placed in a frac tank located near the dewatering sump. Total fluids were removed from the frac tank via vacuum truck and transported either to the Refinery for disposal in the wastewater treatment system upstream of the oil/water separator. One load (35 barrels) of total fluids removed from the frac tank was disposed of at the Lovington Station 567 Salt Water Disposal site in July 2011. Total fluids removed from the remaining recovery trenches and any monitoring wells containing PSH are transported to the Refinery and disposed of in the wastewater treatment system upstream of the oil/water separator. The portion of PSH within the total fluids is estimated.

In addition to the recovery wells, a number of monitor wells that have historically exhibited PSH are gauged by a dedicated technician approximately monthly. PSH is periodically bailed or pumped out of these wells. Table 6 provides a summary of the approximate volume of PSH that was removed from each well and the records are included in Appendix F.

During 2011, an estimated 1,084,118 gallons of groundwater and an estimated 118,798 gallons of PSH were recovered through operation of the recovery system and bailing specific wells. The majority of the PSH recovered came from RW-2, RW-5 and RW-8.

Once the upgrades to the recovery system have been completed, the accuracy of the volume of groundwater and PSH recovered from the recovery trenches will be improved. Select monitoring wells will continue to be bailed or pumped by hand; however the bulk of recovery will be captured by the automated recovery system.

7. Conclusions

The following conclusions are based upon the information obtained in 2011 and comparison to data from prior years:

- Groundwater flow direction and gradient remains consistent with that measured in past years.
- The PSH plumes appear to have changed somewhat between 2010 and 2011, as follows:
    - The thickness of PSH southeast of the NCL has decreased somewhat since the end of 2010, but the plume has extended toward the north and south.
    - The extent of PSH in the TEL area has decreased.
    - The thickness of PSH in the north Refinery area (MW-97) has fluctuated but the extent of the PSH remained consistent.
    - The thickness of the PSH plume in the south Refinery area appears fairly consistent, with a slight shift to the south of US-82 at KWB-2R. The thicknesses of PSH in this area have fluctuated and appear to fluctuate between seasons.
    - The thickness and extent of the PSH plume east of the Refinery, near Bolton Road showed an increase between 2010 and 2011. The thicknesses of PSH in this plume decreased between the first and second semiannual events of 2011.
    - The thickness and extent of PSH at the western end of the Evaporation Ponds remained consistent between the second semiannual event of 2010 and both events of 2011.
- Groundwater concentrations of organic constituents have generally remained stable or have declined, with the exception of the benzene concentration east of Bolton Road. The presence of benzene concentrations in this area will be confirmed or denied during the 2012 monitoring events.

- The recovery trench system was manually operated during portions of 2011, but not all equipment was operable and therefore the recovery system was not as effective as in previous years.

Navajo is currently designing and implementing an upgrade of the recovery trench system, including installation of separate product and produced groundwater piping, standardized pumps and improved gauges. A copy of the conceptual design for the upgraded system was submitted to NMED and OCD in January 2011. The detailed design of the upgrades was completed in 2011. Construction of the upgrades to the recovery system began in December 2011 and will be completed in March 2012. The upgraded system will be operated throughout the balance of 2012 and Navajo expects to see improved recovery from the upgraded system.

As per the requirements of the updated PCC Permit, an updated FWGMWP will be submitted in June 2012.

8. References

ARCADIS, 2010b. *2010 Facility Wide Groundwater Monitoring Workplan, NMD048918817 and DP GW-028.* October 2010.

ARCADIS, 2011a. *Groundwater and Product Recovery System Basis of Design.* January 2011.

ARCADIS, 2011b. *2011 Facility Wide Groundwater Monitoring Workplan, NMD048918817 and DP GW-028.* June 2011.

ARCADIS, 2011c. *AOC Group 3 Corrective Action Investigation Report, RCRA Permit NMD048918817.* July 2011.

ARCADIS, 2011d. *2011 Facility Wide Groundwater Monitoring Workplan, NMD048918817 and DP GW-028.* June 2011, updated October 2011.

NMED, 2010a. *Approval, 2010 Facility Wide Groundwater Monitoring Work Plan Revised NMD048918817 and DP-GW-028, Navajo Refining Company, Artesia Refinery.* HWB-NRC-10-001, November 2010.

NMED, 2010b. *Navajo Refining Company, Artesia Refinery, Post-Closure Care Permit.* December 2010.

NMED, 2011a. *Approval with Modifications, 2010 Annual Groundwater Report, Navajo Refining Company, Artesia Refinery.* HWB-NRC-11-02, August 2011.

NMED, 2011b. *Approval with Modifications, 2011 Facility Wide Groundwater Monitoring Workplan, Navajo Refining Company, Artesia Refinery.* HWB-NRC-11-04, September 2011.

NMED, 2012. *Risk Assessment Guidance for Site Investigations and Remediation.* February 2012.

OCD, 2008. *Discharge Permit (GW-029), Navajo Refining Company – Artesia Refinery.* August 2008.

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	KWB-1A	672969.12	526181.36	3353.46	18 to 32	3/23/2011	--	13.88	3339.58	--
Shallow	KWB-1A	672969.12	526181.36	3353.46	18 to 32	9/6/2011	--	16.69	3336.77	--
Shallow	KWB-1B	672968.90	526191.02	3352.83	18 to 32	3/23/2011	--	15.58	3337.25	--
Shallow	KWB-1B	672968.90	526191.02	3352.83	18 to 32	9/6/2011	--	18.38	3334.45	--
Valley Fill	KWB-1C	672968.22	526202.95	3351.38	30.5 to 49.5	3/23/2011	--	16.17	3335.21	--
Valley Fill	KWB-1C	672968.22	526202.95	3351.38	30.5 to 49.5	9/6/2011	--	19.00	3332.38	--
Shallow	KWB-2R	670207.24	524897.59	3364.32	unknown	3/23/2011	23.50	23.52	3340.82	0.02
Shallow	KWB-2R	670207.24	524897.59	3364.32	unknown	9/6/2011	20.92	21.08	3343.37	0.16
Shallow	KWB-3AR	669972.87	528901.80	3347.08	unknown	3/23/2011	--	24.12	3322.96	--
Shallow	KWB-3AR	669972.87	528901.80	3347.08	unknown	9/7/2011	--	15.03	3332.05	--
Shallow	KWB-4	670616.38	524572.44	3370.25	20 to 39	3/24/2011	25.47	27.90	3344.29	2.43
Shallow	KWB-4	670616.38	524572.44	3370.25	20 to 39	9/7/2011	24.07	24.10	3346.17	0.03
Shallow	KWB-5	670729.55	525244.51	3364.72	24.7 to 38.7	3/24/2011	24.52	24.56	3340.19	0.04
Shallow	KWB-5	670729.55	525244.51	3364.72	24.7 to 38.7	9/7/2011	23.24	23.28	3341.47	0.04
Shallow	KWB-6	670449.36	526158.70	3360.30	17.5 to 36.5	3/24/2011	22.82	24.98	3337.05	2.16
Shallow	KWB-6	670449.36	526158.70	3360.30	17.5 to 36.5	9/7/2011	20.45	20.79	3339.78	0.34
Shallow	KWB-7	671266.72	529055.47	3346.16	18 to 32	3/23/2011	--	24.50	3321.66	--
Shallow	KWB-7	671266.72	529055.47	3346.16	18 to 32	9/7/2011	--	19.12	3327.04	--
Shallow	KWB-8	671000.57	527874.87	3350.41	unknown	3/23/2011	25.46	29.05	3324.23	3.59
Shallow	KWB-8	671000.57	527874.87	3350.41	unknown	9/7/2011	18.40	19.27	3331.84	0.87
Shallow	KWB-9	669628.19	527592.61	3354.53	20 to 34	3/23/2011	--	28.46	3326.07	--
Shallow	KWB-9	669628.19	527592.61	3354.53	20 to 34	9/7/2011	--	21.30	3333.23	--
Shallow	KWB-10R	671756.34	526206.06	3350.97	unknown	3/23/2011	17.15	17.58	3333.73	0.43
Shallow	KWB-10R	671756.34	526206.06	3350.97	unknown	9/26/2011 (c)	17.02	17.36	3333.88	0.34
Shallow	KWB-11A	670643.67	529043.46	3348.72	30 to 39.5	3/23/2011	--	26.25	3322.47	--
Shallow	KWB-11A	670643.67	529043.46	3348.72	30 to 39.5	9/7/2011	--	18.12	3330.60	--
Valley Fill	KWB-11B	670653.84	529044.06	3348.03	50 to 69.5	3/23/2011	--	29.96	3318.07	--
Valley Fill	KWB-11B	670653.84	529044.06	3348.03	50 to 69.5	9/7/2011	--	19.82	3328.21	--
Shallow	KWB-12A	669074.44	527590.88	3351.81	15.5 to 24.5	3/23/2011	--	Dry	--	--
Shallow	KWB-12A	669074.44	527590.88	3351.81	15.5 to 24.5	9/7/2011	--	18.23	3333.58	--
Valley Fill	KWB-12B	669064.18	527590.12	3351.63	25.5 to 39.5	3/23/2011	--	26.60	3325.03	--
Valley Fill	KWB-12B	669064.18	527590.12	3351.63	25.5 to 39.5	9/7/2011	--	18.08	3333.55	--
Shallow	KWB-13	669077.00	524892.42	3365.67	unknown	3/24/2011	--	26.97	3338.70	--
Shallow	KWB-13	669077.00	524892.42	3365.67	unknown	9/7/2011	--	23.23	3342.44	--

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	KWB-P2	671184.46	530219.31	3338.97	unknown	3/23/2011	--	29.80	3309.17	--
Shallow	KWB-P2	671184.46	530219.31	3338.97	unknown	9/7/2011	--	30.79	3308.18	--
Shallow	KWB-P3	669704.98	538134.01	3308.50	unknown	3/23/2011	--	8.75	3299.75	--
Shallow	KWB-P4	670970.10	537416.92	3305.39	unknown	3/23/2011	--	5.89	3299.50	--
Shallow	KWB-P4	670970.10	537416.92	3305.39	unknown	9/9/2011	--	6.93	3298.46	--
Shallow	MW-1R	675135.17	538636.78	3313.28	unknown	3/22/2011	--	8.53	3304.75	--
Shallow	MW-1R	675135.17	538636.78	3313.28	unknown	9/9/2011	--	11.89	3301.39	--
Shallow	MW-2A	675979.09	540803.91	3312.97	unknown	3/22/2011	--	7.98	3304.99	--
Shallow	MW-2A	675979.09	540803.91	3312.97	unknown	9/9/2011	--	11.37	3301.60	--
Valley Fill	MW-2B	675969.73	540801.44	3312.49	unknown	3/22/2011	--	9.48	3303.01	--
Valley Fill	MW-2B	675969.73	540801.44	3312.49	unknown	9/9/2011	--	12.25	3300.24	--
Shallow	MW-3	674443.34	540503.24	3310.32	unknown	3/22/2011	--	8.07	3302.25	--
Shallow	MW-3	674443.34	540503.24	3310.32	unknown	9/8/2011	--	10.61	3299.71	--
Shallow	MW-4A	674083.00	540529.44	3312.71	unknown	3/22/2011	--	10.74	3301.97	--
Shallow	MW-4A	674083.00	540529.44	3312.71	unknown	9/8/2011	--	13.20	3299.51	--
Valley Fill	MW-4B	674089.71	540541.34	3312.01	unknown	3/22/2011	--	9.97	3302.04	--
Valley Fill	MW-4B	674089.71	540541.34	3312.01	unknown	9/8/2011	--	12.58	3299.43	--
Shallow	MW-5A	674272.84	541759.78	3308.62	unknown	3/22/2011	--	7.97	3300.65	--
Shallow	MW-5A	674272.84	541759.78	3308.62	unknown	9/8/2011	--	9.73	3298.89	--
Valley Fill	MW-5B	674272.33	541739.12	3308.95	41.5 to 50.5	3/22/2011	--	7.54	3301.41	--
Valley Fill	MW-5B	674272.33	541739.12	3308.95	41.5 to 50.5	9/8/2011	--	9.93	3299.02	--
Valley Fill	MW-5C	674279.57	541728.80	3309.28	59.25 to 68.75	3/22/2011	--	7.67	3301.61	--
Valley Fill	MW-5C	674279.57	541728.80	3309.28	59.25 to 68.75	9/8/2011	--	10.12	3299.16	--
Shallow	MW-6A	674427.07	539833.47	3313.46	unknown	3/22/2011	--	11.20	3302.26	--
Shallow	MW-6A	674427.07	539833.47	3313.46	unknown	9/8/2011	--	13.28	3300.18	--
Valley Fill	MW-6B	674418.57	539834.04	3313.35	unknown	3/22/2011	--	10.91	3302.44	--
Valley Fill	MW-6B	674418.57	539834.04	3313.35	unknown	9/8/2011	--	13.69	3299.66	--
Shallow	MW-7A	674447.64	542716.01	3309.24	unknown	3/22/2011	--	6.63	3302.61	--
Shallow	MW-7A	674447.64	542716.01	3309.24	unknown	9/8/2011	--	9.93	3299.31	--
Valley Fill	MW-7B	674455.63	542715.61	3307.87	unknown	3/22/2011	--	7.92	3299.95	--
Valley Fill	MW-7B	674455.63	542715.61	3307.87	unknown	9/8/2011	--	10.28	3297.59	--
Shallow	MW-8	673215.93	529055.18	3336.42	unknown	3/23/2011	--	12.51	3323.91	--
Shallow	MW-8	673215.93	529055.18	3336.42	unknown	9/8/2011	--	13.66	3322.76	--
Shallow	MW-9	673169.56	529232.03	3336.20	unknown	3/23/2011	--	13.18	3323.02	--

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	MW-9	673169.56	529232.03	3336.20	unknown	9/7/2011	--	14.72	3321.48	--
Shallow	MW-10	672121.15	541540.05	3304.76	unknown	3/22/2011	--	4.80	3299.96	--
Shallow	MW-10	672121.15	541540.05	3304.76	unknown	9/8/2011	--	7.07	3297.69	--
Shallow	MW-11A	677317.73	543675.36	3310.76	unknown	3/22/2011	--	7.78	3302.98	--
Shallow	MW-11A	677317.73	543675.36	3310.76	unknown	9/8/2011	--	10.53	3300.23	--
Valley Fill	MW-11B	677305.72	543685.50	3310.76	unknown	3/22/2011	--	7.60	3303.16	--
Valley Fill	MW-11B	677305.72	543685.50	3310.76	unknown	9/8/2011	--	10.51	3300.25	--
Shallow	MW-12	676952.63	541505.50	3312.73	unknown	3/23/2011	--	6.26	3306.47	--
Shallow	MW-12	676952.63	541505.50	3312.73	unknown	9/8/2011	--	10.31	3302.42	--
Shallow	MW-13	674951.80	539762.62	3314.24	unknown	3/23/2011	--	9.87	3304.37	--
Shallow	MW-13	674951.80	539762.62	3314.24	unknown	9/8/2011	--	13.45	3300.79	--
Shallow	MW-14	676122.48	543280.49	3311.84	unknown	3/23/2011	--	7.11	3304.73	--
Shallow	MW-14	676122.48	543280.49	3311.84	unknown	9/8/2011	--	Dry	--	--
Shallow	MW-15	674731.39	539003.75	3313.72	unknown	3/22/2011	--	9.44	3304.28	--
Shallow	MW-15	674731.39	539003.75	3313.72	unknown	9/9/2011	--	13.21	3300.51	--
Shallow	MW-16	675613.35	534389.17	3316.12	unknown	3/23/2011	--	8.94	3307.18	--
Shallow	MW-16	675613.35	534389.17	3316.12	unknown	9/7/2011	--	10.69	3305.43	--
Shallow	MW-17	678064.09	535480.70	3322.01	unknown	3/23/2011	--	19.31	3302.70	--
Shallow	MW-18	674172.45	522318.86	3365.42	15 to 19	3/25/2011	--	12.22	3353.20	--
Shallow	MW-18	674172.45	522318.86	3365.42	15 to 19	9/6/2011	--	14.73	3350.69	--
Shallow	MW-18A	672548.16	543447.78	3308.58	unknown	3/22/2011	--	8.12	3300.46	--
Shallow	MW-18A	672548.16	543447.78	3308.58	unknown	9/8/2011	--	11.40	3297.18	--
Valley Fill	MW-18B	672557.96	543458.22	3308.74	unknown	3/22/2011	--	7.75	3300.99	--
Valley Fill	MW-18B	672557.96	543458.22	3308.74	unknown	9/8/2011	--	11.42	3297.32	--
Valley Fill	MW-18T	672559.79	543449.75	3308.55	unknown	3/22/2011	--	8.08	3300.47	--
Valley Fill	MW-18T	672559.79	543449.75	3308.55	unknown	9/8/2011	--	11.70	3296.85	--
Shallow	MW-19	673597.29	521670.75	3368.00	unknown	3/24/2011	--	14.80	3353.20	--
Shallow	MW-19	673597.29	521670.75	3368.00	unknown	9/6/2011	--	15.64	3352.36	--
Shallow	MW-20	673800.56	527834.67	3340.91	9.5 to 23.5	3/23/2011	--	11.59	3329.32	--
Shallow	MW-20	673800.56	527834.67	3340.91	9.5 to 23.5	9/7/2011	--	15.27	3325.64	--
Shallow	MW-21	673180.38	529150.62	3337.31	7.5 to 22	3/23/2011	--	13.98	3323.33	--
Shallow	MW-21	673180.38	529150.62	3337.31	7.5 to 22	9/7/2011	--	15.06	3322.25	--
Shallow	MW-22A	672866.82	541801.63	3307.62	unknown	3/22/2011	--	7.18	3300.44	--

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	MW-22A	672866.82	541801.63	3307.62	unknown	9/8/2011	--	9.43	3298.19	--
Valley Fill	MW-22B	672866.58	541786.97	3307.63	unknown	3/22/2011	--	6.93	3300.70	--
Valley Fill	MW-22B	672866.58	541786.97	3307.63	unknown	9/8/2011	--	9.31	3298.32	--
Shallow	MW-23	672851.25	522821.05	3368.38	15 to 20	3/25/2011	--	14.60	3353.78	--
Shallow	MW-23	672851.25	522821.05	3368.38	15 to 20	9/6/2011	--	16.32	3352.06	--
Shallow	MW-24	676498.23	544101.56	3312.85	15 to 20	3/23/2011	--	8.44	3304.41	--
Shallow	MW-24	676498.23	544101.56	3312.85	15 to 20	9/8/2011	--	13.67	3299.18	--
Shallow	MW-25	675386.30	537955.86	3312.29	15.75 to 25.25	3/22/2011	--	13.25	3299.04	--
Shallow	MW-25	675386.30	537955.86	3312.29	15.75 to 25.25	9/9/2011	--	14.98	3297.31	--
Shallow	MW-26	676229.18	535348.61	3314.87	15.75 to 25.25	3/23/2011	--	8.03	3306.84	--
Shallow	MW-26	676229.18	535348.61	3314.87	15.75 to 25.25	9/7/2011	--	12.91	3301.96	--
Shallow	MW-27	674495.64	532942.65	3320.85	18.25 to 27.75	3/23/2011	--	15.30	3305.55	--
Shallow	MW-27	674495.64	532942.65	3320.85	18.25 to 27.75	9/7/2011	--	15.10	3305.75	--
Shallow	MW-28	671508.38	524521.56	3370.27	25 to 30	3/24/2011	--	23.87	3346.40	--
Shallow	MW-28	671508.38	524521.56	3370.27	25 to 30	9/6/2011	--	24.23	3346.04	--
Shallow	MW-29	673481.15	523544.65	3360.64	9.75 to 19.25	3/24/2011	--	11.21	3349.43	--
Shallow	MW-29	673481.15	523544.65	3360.64	9.75 to 19.25	9/6/2011	--	13.82	3346.82	--
Shallow	MW-30	674125.92	523548.75	3354.33	unknown	3/24/2011	--	8.36	3345.97	--
Shallow	MW-30	674125.92	523548.75	3354.33	unknown	9/6/2011	--	10.23	3344.10	--
Shallow	MW-39	673039.50	523422.93	3358.79	14 to 24	3/24/2011	9.25	9.30	3349.53	0.05
Shallow	MW-39	673039.50	523422.93	3358.79	14 to 24	9/7/2011	11.75	11.78	3347.03	0.03
Shallow	MW-40	673161.12	523489.02	3356.93	unknown	3/24/2011	--	7.39	3349.54	--
Shallow	MW-40	673161.12	523489.02	3356.93	unknown	9/6/2011	--	9.97	3346.96	--
Shallow	MW-41	673379.87	523374.64	3356.58	14 to 19	3/24/2011	--	8.45	3348.13	--
Shallow	MW-41	673379.87	523374.64	3356.58	14 to 19	9/6/2011	--	10.67	3345.91	--
Shallow	MW-42	673480.27	523263.53	3358.59	unknown	3/24/2011	--	8.43	3350.16	--
Shallow	MW-42	673480.27	523263.53	3358.59	unknown	9/6/2011	Well damaged - could not be gauged or sampled			
Shallow	MW-43	673115.86	522950.40	3365.49	15.5 to 20.5	3/25/2011	--	12.08	3353.41	--
Shallow	MW-43	673115.86	522950.40	3365.49	15.5 to 20.5	9/6/2011	--	13.70	3351.79	--
Shallow	MW-45	674247.07	523663.75	3351.51	10.5 to 15.5	3/24/2011	--	5.42	3346.09	--
Shallow	MW-45	674247.07	523663.75	3351.51	10.5 to 15.5	9/6/2011	--	7.25	3344.26	--
Shallow	MW-46R	674223.03	524920.28	3350.11	unknown	3/24/2011	--	4.38	3345.73	--
Shallow	MW-46R	674223.03	524920.28	3350.11	unknown	9/6/2011	--	5.68	3344.43	--
Shallow	MW-48	670689.39	524080.35	3362.97	unknown	3/24/2011	20.32	20.57	3342.60	0.25

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	MW-48	670689.39	524080.35	3362.97	unknown	9/7/2011	19.45	19.55	3343.50	0.10
Shallow	MW-49	672051.80	523610.79	3359.77	unknown	3/24/2011	--	12.47	3347.30	--
Shallow	MW-49	672051.80	523610.79	3359.77	unknown	9/6/2011	--	13.34	3346.43	--
Shallow	MW-50	671502.45	521857.84	3371.05	unknown	3/25/2011	--	19.04	3352.01	--
Shallow	MW-50	671502.45	521857.84	3371.05	unknown	9/7/2011	--	19.21	3351.84	--
Shallow	MW-52	670165.24	523370.99	3368.30	unknown	3/24/2011	--	21.53	3346.77	--
Shallow	MW-52	670165.24	523370.99	3368.30	unknown	9/6/2011	--	20.36	3347.94	--
Shallow	MW-53	673626.07	521459.12	3368.73	unknown	3/24/2011	--	15.40	3353.33	--
Shallow	MW-53	673626.07	521459.12	3368.73	unknown	9/6/2011	--	16.14	3352.59	--
Shallow	MW-54A	674138.65	522110.51	3366.49	unknown	3/24/2011	--	14.32	3352.17	--
Shallow	MW-54A	674138.65	522110.51	3366.49	unknown	9/6/2011	--	15.54	3350.95	--
Valley Fill	MW-54B	674148.44	522118.80	3366.47	unknown	3/24/2011	--	14.33	3352.14	--
Valley Fill	MW-54B	674148.44	522118.80	3366.47	unknown	9/6/2011	--	15.65	3350.82	--
Shallow	MW-55	674091.95	522766.46	3364.77	unknown	3/24/2011	--	12.91	3351.86	--
Shallow	MW-55	674091.95	522766.46	3364.77	unknown	9/6/2011	--	14.33	3350.44	--
Shallow	MW-56	674160.38	523450.14	3357.44	unknown	3/24/2011	--	11.61	3345.83	--
Shallow	MW-56	674160.38	523450.14	3357.44	unknown	9/6/2011	--	13.37	3344.07	--
Shallow	MW-57	669935.59	527579.02	3350.91	unknown	3/23/2011	--	23.98	3326.93	--
Shallow	MW-57	669935.59	527579.02	3350.91	unknown	9/7/2011	--	15.50	3335.41	--
Shallow	MW-58	670207.27	525197.99	3362.22	unknown	3/24/2011	--	22.39	3339.83	--
Shallow	MW-58	670207.27	525197.99	3362.22	unknown	9/6/2011	--	19.71	3342.51	--
Shallow	MW-59	672815.74	523854.62	3354.78	unknown	3/24/2011	--	6.38	3348.40	--
Shallow	MW-59	672815.74	523854.62	3354.78	unknown	9/6/2011	--	9.06	3345.72	--
Shallow	MW-60	672850.69	524144.40	3354.33	unknown	3/25/2011	--	7.53	3346.80	--
Shallow	MW-60	672850.69	524144.40	3354.33	unknown	9/6/2011	--	10.32	3344.01	--
Shallow	MW-61	672441.15	522574.92	3369.47	14 to 29	3/25/2011	--	14.45	3355.02	--
Shallow	MW-61	672441.15	522574.92	3369.47	14 to 29	9/7/2011	--	16.08	3353.39	--
Shallow	MW-62	672648.15	522702.48	3371.29	14 to 29	3/25/2011	--	17.53	3353.76	--
Shallow	MW-62	672648.15	522702.48	3371.29	14 to 29	9/6/2011	--	19.13	3352.16	--
Shallow	MW-64	670716.03	523338.61	3369.52	15 to 30	3/24/2011	21.42	22.84	3347.82	1.42
Shallow	MW-64	670716.03	523338.61	3369.52	15 to 30	9/7/2011	21.25	22.58	3348.00	1.33
Shallow	MW-65	670949.22	523711.75	3363.60	14.5 to 29.5	3/24/2011	17.63	20.95	3345.31	3.32
Shallow	MW-65	670949.22	523711.75	3363.60	14.5 to 29.5	9/7/2011	17.56	19.43	3345.67	1.87
Shallow	MW-66	671247.57	524560.06	3363.46	14.6 to 29.6	3/24/2011	--	18.13	3345.33	--

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	MW-66	671247.57	524560.06	3363.46	14.6 to 29.6	9/6/2011	--	17.97	3345.49	--
Shallow	MW-67	673224.88	522342.43	3365.45	12 to 27	NR	11.89	12.90	3353.36	1.01
Shallow	MW-67	673224.88	522342.43	3365.45	12 to 27	9/7/2011	12.93	16.20	3351.87	3.27
Shallow	MW-68	674301.02	531466.90	3328.21	unknown	3/23/2011	--	22.61	3305.60	--
Shallow	MW-68	674301.02	531466.90	3328.21	unknown	9/7/2011	--	23.65	3304.56	--
Shallow	MW-69	675962.29	540401.29	3313.86	unknown	3/23/2011	--	7.30	3306.56	--
Shallow	MW-69	675962.29	540401.29	3313.86	unknown	9/8/2011	--	Dry	--	--
Shallow	MW-70	670892.66	542787.60	3306.30	unknown	3/22/2011	--	7.05	3299.25	--
Shallow	MW-70	670892.66	542787.60	3306.30	unknown	9/8/2011	--	9.65	3296.65	--
Shallow	MW-71	673016.80	529560.41	3335.29	unknown	3/23/2011	--	15.97	3319.32	--
Shallow	MW-71	673016.80	529560.41	3335.29	unknown	9/7/2011	--	16.59	3318.70	--
Shallow	MW-72	676691.27	542662.31	3308.45	2 to 12	3/22/2011	--	6.28	3302.17	--
Shallow	MW-72	676691.27	542662.31	3308.45	2 to 12	9/9/2011	--	8.23	3300.22	--
Shallow	MW-73	675910.20	542130.56	3310.18	2 to 17	3/22/2011	--	9.58	3300.60	--
Shallow	MW-73	675910.20	542130.56	3310.18	2 to 17	9/8/2011	--	9.84	3300.34	--
Shallow	MW-74	675059.14	541546.30	3310.03	2 to 17	3/22/2011	--	8.21	3301.82	--
Shallow	MW-74	675059.14	541546.30	3310.03	2 to 17	9/8/2011	--	10.26	3299.77	--
Shallow	MW-75	674622.31	541132.78	3310.21	3 to 18	3/22/2011	--	8.21	3302.00	--
Shallow	MW-75	674622.31	541132.78	3310.21	3 to 18	9/8/2011	--	10.66	3299.55	--
Shallow	MW-76	674482.47	541053.83	3311.84	3 to 18	3/22/2011	--	9.79	3302.05	--
Shallow	MW-76	674482.47	541053.83	3311.84	3 to 18	9/8/2011	--	12.24	3299.60	--
Shallow	MW-77	674529.89	541104.86	3310.07	3 to 18	3/22/2011	--	8.05	3302.02	--
Shallow	MW-77	674529.89	541104.86	3310.07	3 to 18	9/8/2011	--	10.51	3299.56	--
Shallow	MW-78	674529.23	541073.45	3310.14	2 to 17	3/22/2011	--	8.09	3302.05	--
Shallow	MW-78	674529.23	541073.45	3310.14	2 to 17	9/8/2011	--	10.55	3299.59	--
Shallow	MW-79	675349.67	540906.08	3311.43	2 to 17	3/22/2011	--	8.84	3302.59	--
Shallow	MW-79	675349.67	540906.08	3311.43	2 to 17	9/8/2011	--	11.03	3300.40	--
Shallow	MW-80	675371.74	540646.46	3310.79	2 to 17	3/22/2011	--	7.31	3303.48	--
Shallow	MW-80	675371.74	540646.46	3310.79	2 to 17	9/8/2011	--	10.21	3300.58	--
Shallow	MW-81	675252.80	540544.47	3312.34	2 to 17	3/22/2011	--	8.93	3303.41	--
Shallow	MW-81	675252.80	540544.47	3312.34	2 to 17	9/8/2011	--	11.94	3300.40	--
Shallow	MW-82	675035.42	540806.88	3310.75	2 to 17	3/22/2011	--	8.12	3302.63	--
Shallow	MW-82	675035.42	540806.88	3310.75	2 to 17	9/8/2011	--	10.78	3299.97	--
Shallow	MW-83	674524.97	540832.80	3310.19	2 to 17	3/22/2011	--	7.99	3302.20	--

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	MW-83	674524.97	540832.80	3310.19	2 to 17	9/9/2011	--	10.51	3299.68	--
Shallow	MW-84	674798.43	540109.13	3311.59	2 to 17	3/22/2011	--	9.56	3302.03	--
Shallow	MW-84	674798.43	540109.13	3311.59	2 to 17	9/8/2011	--	10.23	3301.36	--
Shallow	MW-85	674566.12	539805.49	3311.09	3 to 18	3/22/2011	7.88	9.28	3302.93	1.40
Shallow	MW-85	674566.12	539805.49	3311.09	3 to 18	9/9/2011	11.24	12.67	3299.56	1.43
Shallow	MW-86	674645.96	539671.17	3311.06	2 to 17	3/22/2011	7.35	8.83	3303.41	1.48
Shallow	MW-86	674645.96	539671.17	3311.06	2 to 17	9/8/2011	10.91	11.91	3299.95	1.00
Shallow	MW-87	673379.98	543280.45	3307.64	2 to 17	3/22/2011	--	7.43	3300.21	--
Shallow	MW-87	673379.98	543280.45	3307.64	2 to 17	9/8/2011	--	9.83	3297.81	--
Shallow	MW-88	672899.14	540832.09	3308.68	3 to 18	3/22/2011	--	8.12	3300.56	--
Shallow	MW-88	672899.14	540832.09	3308.68	3 to 18	9/8/2011	--	10.22	3298.46	--
Shallow	MW-89	675211.56	533835.00	3318.32	2 to 17	3/23/2011	--	10.95	3307.37	--
Shallow	MW-89	675211.56	533835.00	3318.32	2 to 17	9/7/2011	--	12.22	3306.10	--
Shallow	MW-90	672909.28	521960.18	3369.42	5 to 20	3/25/2011	--	14.91	3354.51	--
Shallow	MW-90	672909.28	521960.18	3369.42	5 to 20	9/6/2011	--	16.11	3353.31	--
Shallow	MW-91	672945.86	522146.43	3367.73	7 to 22	3/25/2011	--	13.73	3354.00	--
Shallow	MW-91	672945.86	522146.43	3367.73	7 to 22	9/6/2011	--	14.94	3352.79	--
Shallow	MW-92	672766.10	522167.26	3368.72	5 to 20	3/25/2011	14.67	14.72	3354.04	0.05
Shallow	MW-92	672766.10	522167.26	3368.72	5 to 20	9/7/2011	15.66	16.52	3352.89	0.86
Shallow	MW-93	672897.25	522446.83	3363.79	5 to 20	3/25/2011	--	10.18	3353.61	--
Shallow	MW-93	672897.25	522446.83	3363.79	5 to 20	9/6/2011	--	11.44	3352.35	--
Shallow	MW-94	673510.54	522336.27	3367.97	5 to 20	3/24/2011	13.67	20.17	3353.00	6.50
Shallow	MW-94	673510.54	522336.27	3367.97	5 to 20	9/7/2011	14.72	22.55	3351.68	7.83
Shallow	MW-95	673084.72	522308.89	3368.70	7 to 22	3/25/2011	--	15.11	3353.59	--
Shallow	MW-95	673084.72	522308.89	3368.70	7 to 22	9/6/2011	--	16.39	3352.31	--
Shallow	MW-96	673143.60	521917.50	3368.92	7 to 22	3/25/2011	--	14.93	3353.99	--
Shallow	MW-96	673143.60	521917.50	3368.92	7 to 22	9/6/2011	--	15.95	3352.97	--
Shallow	MW-97	672660.45	522295.96	3365.92	8 to 23	NR	11.67	18.08	3352.97	6.41
Shallow	MW-97	672660.45	522295.96	3365.92	8 to 23	9/7/2011	13.97	17.54	3351.24	3.57
Shallow	MW-98	672517.05	523220.39	3361.36	13 to 23	3/25/2011	--	11.18	3350.18	--
Shallow	MW-98	672517.05	523220.39	3361.36	13 to 23	9/6/2011	--	12.93	3348.43	--
Shallow	MW-99	671652.52	524579.74	3364.07	12 to 27	3/24/2011	--	18.98	3345.09	--
Shallow	MW-99	671652.52	524579.74	3364.07	12 to 27	9/6/2011	--	18.37	3345.70	--
Shallow	MW-101	671628.25	523506.58	3364.23	8 to 23	3/24/2011	--	17.03	3347.20	--

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	MW-101	671628.25	523506.58	3364.23	8 to 23	9/6/2011	--	17.42	3346.81	--
Shallow	MW-102	671176.70	522937.01	3367.64	12 to 27	3/24/2011	17.83	20.30	3349.32	2.47
Shallow	MW-102	671176.70	522937.01	3367.64	12 to 27	9/7/2011	17.93	20.50	3349.20	2.57
Shallow	MW-103	670472.55	522607.80	3372.47	7 to 22	3/24/2011	--	20.03	3352.44	--
Shallow	MW-103	670472.55	522607.80	3372.47	7 to 22	9/6/2011	--	19.53	3352.94	--
Shallow	MW-104	670450.35	522729.44	3371.43	3 to 18	3/24/2011	--	14.60	3356.83	--
Shallow	MW-104	670450.35	522729.44	3371.43	3 to 18	9/6/2011	--	13.75	3357.68	--
Shallow	MW-105	671924.44	522454.93	3364.99	8 to 18	3/24/2011	13.42	13.84	3351.49	0.42
Shallow	MW-105	671924.44	522454.93	3364.99	8 to 18	9/7/2011	14.13	14.74	3350.74	0.61
Shallow	MW-106	672207.14	523454.55	3358.98	0 to 11	3/24/2011	--	9.93	3349.05	--
Shallow	MW-106	672207.14	523454.55	3358.98	0 to 11	9/6/2011	--	11.07	3347.91	--
Shallow	MW-107	671961.38	524600.45	3359.44	12 to 22	3/24/2011	--	13.53	3345.91	--
Shallow	MW-107	671961.38	524600.45	3359.44	12 to 22	9/6/2011	--	14.78	3344.66	--
Shallow	MW-108	673659.33	521910.16	3369.11	9 to 24	3/24/2011	--	16.19	3352.92	--
Shallow	MW-108	673659.33	521910.16	3369.11	9 to 24	9/6/2011	--	17.16	3351.95	--
Shallow	MW-109	670174.25	523065.52	3368.09	15 to 29.5	3/24/2011	--	19.85	3348.24	--
Shallow	MW-109	670174.25	523065.52	3368.09	15 to 29.5	9/7/2011	--	18.83	3349.26	--
Shallow	MW-110	670174.33	522796.69	3368.03	15 to 29.5	3/24/2011	--	17.44	3350.59	--
Shallow	MW-110	670174.33	522796.69	3368.03	15 to 29.5	9/6/2011	--	16.54	3351.49	--
Shallow	NCL-31	673629.51	521669.01	3367.54	13 to 18	3/24/2011	--	14.38	3353.16	--
Shallow	NCL-31	673629.51	521669.01	3367.54	13 to 18	9/6/2011	--	15.24	3352.30	--
Shallow	NCL-32	673984.83	521808.14	3364.91	17 to 22	3/24/2011	--	13.07	3351.84	--
Shallow	NCL-32	673984.83	521808.14	3364.91	17 to 22	9/6/2011	--	14.60	3350.31	--
Shallow	NCL-33	673967.20	522245.18	3363.97	13 to 18	3/24/2011	--	12.64	3351.33	--
Shallow	NCL-33	673967.20	522245.18	3363.97	13 to 18	9/6/2011	--	13.81	3350.16	--
Shallow	NCL-34A	673885.52	522235.08	3365.49	unknown	3/24/2011	12.64	18.00	3351.78	5.36
Shallow	NCL-34A	673885.52	522235.08	3365.49	unknown	9/7/2011	13.38	19.25	3350.94	5.87
Shallow	NCL-44	673986.41	522062.11	3364.45	unknown	3/24/2011	--	12.08	3352.37	--
Shallow	NCL-44	673986.41	522062.11	3364.45	unknown	9/6/2011	--	13.16	3351.29	--
Shallow	NCL-49	674099.16	521648.40	3371.13	unknown	3/24/2011	--	18.80	3352.33	--
Shallow	NCL-49	674099.16	521648.40	3371.13	unknown	9/7/2011	--	20.00	3351.13	--
Shallow	NP-1	672992.73	528035.04	3342.40	unknown	3/23/2011	--	15.47	3326.93	--
Shallow	NP-1	672992.73	528035.04	3342.40	unknown	9/7/2011	--	17.42	3324.98	--
Shallow	NP-2	673571.19	527611.64	3342.77	9.5 to 18.5	3/23/2011	--	12.94	3329.83	--

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	NP-2	673571.19	527611.64	3342.77	9.5 to 18.5	9/7/2011	--	16.17	3326.60	--
Shallow	NP-3	673990.66	528019.54	3342.93	9.5 to 18.5	3/23/2011	--	14.05	3328.88	--
Shallow	NP-3	673990.66	528019.54	3342.93	9.5 to 18.5	9/7/2011	--	17.92	3325.01	--
Shallow	NP-4	674337.35	528351.85	3345.73	24.5 to 33.5	3/23/2011	--	23.13	3322.60	--
Shallow	NP-4	674337.35	528351.85	3345.73	24.5 to 33.5	9/8/2011	--	28.74	3316.99	--
Shallow	NP-5	675512.24	524698.19	3349.29	unknown	3/23/2011	--	13.83	3335.46	--
Shallow	NP-5	675512.24	524698.19	3349.29	unknown	9/6/2011	--	14.83	3334.46	--
Shallow	NP-6	672945.23	529083.91	3338.05	unknown	3/23/2011	--	13.85	3324.20	--
Shallow	NP-6	672945.23	529083.91	3338.05	unknown	9/7/2011	--	13.37	3324.68	--
Shallow	NP-8	675399.60	538245.49	3314.67	unknown	3/22/2011	--	10.76	3303.91	--
Shallow	NP-8	675399.60	538245.49	3314.67	unknown	9/9/2011	--	13.80	3300.87	--
Shallow	NP-9	674767.14	523571.69	3360.62	unknown	3/24/2011	--	12.08	3348.54	--
Shallow	NP-9	674767.14	523571.69	3360.62	unknown	9/6/2011	--	13.41	3347.21	--
Shallow	OCD-1R	676741.31	541568.00	3314.27	unknown	3/22/2011	--	9.72	3304.55	--
Shallow	OCD-1R	676741.31	541568.00	3314.27	unknown	9/8/2011	--	12.82	3301.45	--
Shallow	OCD-2A	677036.12	542157.14	3314.16	unknown	3/22/2011	--	9.10	3305.06	--
Shallow	OCD-2A	677036.12	542157.14	3314.16	unknown	9/8/2011	--	13.94	3300.22	--
Valley Fill	OCD-2B	677034.65	542167.57	3313.07	unknown	3/22/2011	--	10.06	3303.01	--
Valley Fill	OCD-2B	677034.65	542167.57	3313.07	unknown	9/8/2011	--	12.73	3300.34	--
Shallow	OCD-3	677516.31	543024.47	3314.43	unknown	3/22/2011	--	9.79	3304.64	--
Shallow	OCD-3	677516.31	543024.47	3314.43	unknown	9/8/2011	--	13.65	3300.78	--
Shallow	OCD-4	678099.52	543893.55	3313.68	unknown	3/22/2011	--	9.17	3304.51	--
Shallow	OCD-4	678099.52	543893.55	3313.68	unknown	9/8/2011	--	13.08	3300.60	--
Shallow	OCD-5	677081.54	544295.35	3311.27	unknown	3/22/2011	--	7.86	3303.41	--
Shallow	OCD-5	677081.54	544295.35	3311.27	unknown	9/8/2011	--	11.18	3300.09	--
Shallow	OCD-6	676538.82	543540.03	3311.40	unknown	3/22/2011	--	7.20	3304.20	--
Shallow	OCD-6	676538.82	543540.03	3311.40	unknown	9/9/2011	--	11.71	3299.69	--
Shallow	OCD-7AR	676169.74	543071.88	3310.03	5.5 to 19.5	3/23/2011	--	6.18	3303.85	--
Shallow	OCD-7AR	676169.74	543071.88	3310.03	5.5 to 19.5	9/9/2011	--	10.55	3299.48	--
Valley Fill	OCD-7B	676157.36	543081.99	3310.26	43.5 to 52.5	3/23/2011	--	7.55	3302.71	--
Valley Fill	OCD-7B	676157.36	543081.99	3310.26	43.5 to 52.5	9/9/2011	--	10.63	3299.63	--
Valley Fill	OCD-7C	676155.95	543069.21	3310.10	60.25 to 69.75	3/23/2011	--	7.63	3302.47	--
Valley Fill	OCD-7C	676155.95	543069.21	3310.10	60.25 to 69.75	9/9/2011	--	10.37	3299.73	--
Shallow	OCD-8A	674976.41	543376.95	3308.72	unknown	3/22/2011	--	9.56	3299.16	--

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	OCD-8A	674976.41	543376.95	3308.72	unknown	9/8/2011	--	11.25	3297.47	--
Valley Fill	OCD-8B	674992.24	543375.06	3309.19	unknown	3/22/2011	--	7.49	3301.70	--
Valley Fill	OCD-8B	674992.24	543375.06	3309.19	unknown	9/8/2011	--	10.18	3299.01	--
Shallow	RW-1	672825.27	522204.68	3367.03	--	3/24/2011	12.93	12.98	3354.09	0.05
Shallow	RW-1	672825.27	522204.68	3367.03	--	9/7/2011	17.90	17.95	3349.12	0.05
Shallow	RW-2	672781.86	522337.29	3368.43	--	3/24/2011	14.70	15.00	3353.67	0.30
Shallow	RW-2	672781.86	522337.29	3368.43	--	9/7/2011	15.82	16.83	3352.41	1.01
Shallow	RW-4	671378.27	523010.47	3364.86	--	3/24/2011	17.79	17.80	3347.07	0.01
Shallow	RW-4	671378.27	523010.47	3364.86	--	9/7/2011	17.94	18.03	3346.90	0.09
Shallow	RW-5	671271.08	523652.31	3363.81	--	3/24/2011	16.57	17.80	3346.99	1.23
Shallow	RW-5	671271.08	523652.31	3363.81	--	9/7/2011	16.68	17.43	3346.98	0.75
Shallow	RW-6	670969.39	522843.22	3368.36	--	3/24/2011	--	Dry	--	--
Shallow	RW-6	670969.39	522843.22	3368.36	--	9/7/2011	--	Dry	--	--
Shallow	RW-7	673579.35	522098.94	3367.09	--	3/24/2011	13.63	16.03	3352.98	2.40
Shallow	RW-7	673579.35	522098.94	3367.09	--	9/7/2011	17.07	18.00	3349.83	0.93
Shallow	RW-8	673266.20	522321.21	3368.10	--	3/24/2011	14.07	17.30	3353.38	3.23
Shallow	RW-8	673266.20	522321.21	3368.10	--	9/7/2011	17.00	17.65	3350.97	0.65
Shallow	RW-9	673423.49	523371.16	3359.51	--	3/24/2011	--	10.40	3349.11	--
Shallow	RW-9	673423.49	523371.16	3359.51	--	9/6/2011	--	12.59	3346.92	--
Shallow	RW-10	673076.17	523469.29	3360.61	--	3/24/2011	--	11.03	3349.58	--
Shallow	RW-10	673076.17	523469.29	3360.61	--	9/6/2011	--	13.58	3347.03	--
Shallow	RW-11-4	670056.32	527577.74	3350.98	--	3/23/2011	--	Dry	--	--
Shallow	RW-11-4	669938.15	527541.66	3353.95	--	9/7/2011	--	19.49	3334.46	--
Shallow	RW-12	670533.38	527533.00	3352.55	--	3/23/2011	--	Dry	--	--
Shallow	RW-12	670533.38	527533.00	3352.55	--	9/7/2011	--	19.63	3332.92	--
Shallow	RW-13	671041.58	527528.79	3351.95	--	3/23/2011	23.56	24.83	3328.14	1.27
Shallow	RW-13	671041.58	527528.79	3351.95	--	9/7/2011	19.28	19.31	3332.66	0.03
Shallow	RW-14	671603.65	527519.99	3351.48	--	3/23/2011	21.22	23.06	3329.89	1.84
Shallow	RW-14	671603.65	527519.99	3351.48	--	9/7/2011	19.82	19.88	3331.65	0.06
Shallow	RW-15E	670709.29	524119.27	3362.30	--	3/24/2011	18.06	19.15	3344.02	1.09
Shallow	RW-15E	670820.45	524123.41	3361.41	--	9/7/2011	17.66	18.10	3343.66	0.44
Shallow	RW-16E	673727.22	523302.16	3360.01	--	3/24/2011	--	12.58	3347.43	--
Shallow	RW-16E	673876.71	523156.09	3360.97	--	9/6/2011	--	14.56	3346.41	--
Shallow	RW-17E	673802.93	522630.29	3366.15	--	3/24/2011	--	12.58	3353.57	--

Table 1 - Well Information and Gauging Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Water-Bearing Zone (a)	Well ID	Northing	Easting	TOC Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Water Elevation (b) (ft amsl)	PSH Thickness (ft)
Shallow	RW-17E	673978.33	522723.59	3364.72	--	9/6/2011	--	14.00	3350.72	--
Shallow	RW-18E	673501.25	526185.14	3352.05	--	3/23/2011	--	11.92	3340.13	--
Shallow	RW-18E	673750.19	526188.64	3350.84	--	9/6/2011	--	15.76	3335.08	--
Shallow	TEL-1	672966.33	523412.82	3358.23	13 to 23	3/25/2011	--	8.73	3349.50	--
Shallow	TEL-1	672966.33	523412.82	3358.23	13 to 23	9/7/2011	--	11.12	3347.11	--
Shallow	TEL-2	672885.90	523419.29	3359.12	13 to 23	3/25/2011	--	9.63	3349.49	--
Shallow	TEL-2	672885.90	523419.29	3359.12	13 to 23	9/7/2011	--	11.96	3347.16	--
Shallow	TEL-3	672796.06	523459.33	3358.33	13 to 23	3/25/2011	--	8.89	3349.44	--
Shallow	TEL-3	672796.06	523459.33	3358.33	13 to 23	9/7/2011	--	11.06	3347.27	--
Shallow	TEL-4	672715.99	523181.18	3360.24	13 to 23	3/25/2011	--	10.40	3349.84	--
Shallow	TEL-4	672715.99	523181.18	3360.24	13 to 23	9/7/2011	--	12.31	3347.93	--
Shallow	UG-1	672453.27	520746.73	3372.94	8 to 23	3/24/2011	--	17.65	3355.29	--
Shallow	UG-1	672453.27	520746.73	3372.94	8 to 23	9/6/2011	--	19.41	3353.53	--
Shallow	UG-2	670726.77	520942.36	3380.41	15 to 30	3/24/2011	--	22.17	3358.24	--
Shallow	UG-2	670726.77	520942.36	3380.41	15 to 30	9/6/2011	--	21.90	3358.51	--
Shallow	UG-3R	671992.70	519424.77	3384.08	17 to 37	3/24/2011	--	30.22	3353.86	--
Shallow	UG-3R	671992.70	519424.77	3384.08	17 to 37	9/7/2011	--	30.78	3353.30	--

Definitions:

amsl = above mean sea level
bgs = below ground surface
btoc = below top of casing
Dry = no water present in casing
ft = feet
NR = date not recorded in field notes
PSH = phase separated hydrocarbons
unknown = screen interval not readily availble

Footnotes:

(a) Wells screened in the shallow water-bearing zone are typically screened at depths of 20 to 25 ft bgs. The shallow water-bearing zone varies between confined and unconfined conditions. Wells screened in the valley fill zone are typically screened at depths ranging between 35 and 70 ft bgs. The clay lens separating the shallow and valley fill zones is discontinuous in some locations and thus, in some areas, there is connectivity between the
(b) Water elevations are adjusted for PSH, if present, using an assumed specific gravity of 0.8.
(c) KWB-10R was not gauged during initial gauging effort in September 2011 due to oversight.

Table 2 - Well Purging and Water Quality Measurement Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Well	Date	Time	Purge Method	Temperature (°C)	Conductivity (S/m)	DO (mg/L)	pH (std units)	ORP (mV)
KWB-1A	04/08/2011	10:00	Low Flow	19.8	4.48	3.05	6.96	70
KWB-1A	09/26/2011	11:30	Low Flow	19.93	3.951	0.4	6.46	-260
KWB-1C	04/08/2011	9:25	Submersible	17.93	4.41	8.1	7.57	4950
KWB-2R	04/06/2011	13:00	Low Flow	21.36	3.47	2.62	6.8	-275
KWB-3AR	04/08/2011	11:00	Low Flow	21.99	5.45	6.6	7.12	141
KWB-7	04/07/2011	16:50	Low Flow	22.18	3.75	3.03	6.94	129
KWB-7	09/22/2011	14:45	Low Flow	20.22	3.804	0.1	6.76	-400
KWB-9	04/06/2011	9:10	Submersible	18.37	3.96	2.58	6.74	133
KWB-11A	04/11/2011	10:20	Submersible	17.64	4.88	5.48	6.83	248
KWB-11A	09/22/2011	11:08	Low Flow	20.35	4.592	0.63	6.53	-310
KWB-11B	04/11/2011	11:00	Submersible	17.73	3.2	19.28	7.52	151
KWB-11B	09/22/2011	12:18	Low Flow	22.20	2.899	4.14	7.28	240
KWB-12A	09/21/2011	9:45	Low Flow	22.24	3.972	3.2	6.66	-220
KWB-12B	04/06/2011	8:30	Low Flow	18.67	4.25	6.18	6.88	145
KWB-12B	09/21/2011	8:30	Low Flow	20.68	3.572	3.59	6.61	-210
KWB-13	04/08/2011	12:07	Submersible	17.93	4.12	9.15	7.16	113
KWB-P4	04/05/2011	16:40	Low Flow	18.22	7.29	2.03	7.09	-17
MW-1R	03/31/2011	12:45	Low Flow	18.58	7.91	2.36	7.41	-115
MW-2A	03/31/2011	8:25	Low Flow	16.25	16.9	1.81	7.28	-81
MW-2A	09/19/2011	11:45	Low Flow	24.61	20.47	0.21	6.88	-320
MW-3	03/31/2011	9:55	Low Flow	18.11	6.29	2.47	7.24	-54
MW-3	09/19/2011	13:50	Low Flow	25.08	5.872	0.3	6.91	-340
MW-4A	04/05/2011	12:35	Low Flow	18.69	6.77	2.22	7.39	-140
MW-4A	09/19/2011	14:46	Low Flow	22.14	6.743	0.33	7.02	-370
MW-4B	04/05/2011	12:00	Low Flow	19.58	4.7	5.86	7.9	13
MW-5A	04/05/2011	11:00	Low Flow	18.04	19.9	1.92	7.22	-128
MW-5A	09/19/2011	15:28	Low Flow	22.86	17.65	0.11	6.96	-360
MW-5B	04/05/2011	10:30	Low Flow	18.65	9.28	2.48	7.54	-19
MW-5C	04/05/2011	9:55	Low Flow	18.36	4.34	7.36	8.24	-27
MW-6A	03/31/2011	11:20	Low Flow	19.39	5.52	2.29	7.68	-137
MW-6B	03/31/2011	10:40	Low Flow	20.35	4.46	6.94	8.01	34
MW-7A	04/04/2011	13:20	Low Flow	17.94	9.31	2.03	7.5	-157
MW-7A	09/20/2011	14:40	Low Flow	23.53	8.961	0.23	7.17	-390
MW-7B	04/04/2011	13:50	Low Flow	18.90	5.5	6.75	8.01	-2
MW-8	04/07/2011	13:50	Low Flow	18.89	6.1	2.93	7.24	101
MW-8	09/22/2011	9:02	Low Flow	20.52	5.591	0.11	6.98	-370
MW-10	04/05/2011	15:45	Low Flow	20.12	7.3	5.6	7.29	-2
MW-10	09/20/2011	8:35	Low Flow	20.86	6.666	4.6	6.95	-240
MW-11A	03/31/2011	16:00	Low Flow	19.91	29.7	2.33	7.08	-45
MW-11B	03/31/2011	16:40	Low Flow	20.21	23.5	2.48	7.86	-160
MW-15	03/31/2011	13:20	Low Flow	18.28	7.15	2.35	7.16	-11
MW-16	04/07/2011	8:25	Low Flow	15.58	4.72	4.25	7.44	70

Table 2 - Well Purging and Water Quality Measurement Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Well	Date	Time	Purge Method	Temperature (°C)	Conductivity (S/m)	DO (mg/L)	pH (std units)	ORP (mV)
MW-18	04/11/2011	15:25	Low Flow	18.76	3.27	4.58	6.98	18
MW-18	09/29/2011	8:40	Low Flow	22.71	2.827	0.34	6.67	-350
MW-18A	04/04/2011	14:40	Low Flow	18.58	25.5	2.06	7.45	-265
MW-18A	09/20/2011	16:35	Low Flow	22.93	22.02	0.22	7.04	-360
MW-18B	04/04/2011	15:15	Low Flow	19.25	5.01	3.05	7.59	-122
MW-20	04/07/2011	12:15	Low Flow	19.22	5.54	3.04	7.2	64
MW-21	04/07/2011	14:30	Low Flow	19.35	6.38	3	7.13	135
MW-21	09/22/2011	9:40	Low Flow	20.17	5.6	0.07	6.87	-380
MW-22A	04/05/2011	15:00	Low Flow	18.79	8.73	2.19	7.24	-153
MW-22A	09/20/2011	7:45	Low Flow	21.12	7.86	0.27	6.99	-340
MW-22B	04/05/2011	14:30	Low Flow	19.70	7.39	4.57	7.63	26
MW-23	04/14/2011	11:20	Low Flow	25.86	3.46	13.02	7.18	-332
MW-23	09/23/2011	9:40	Low Flow	27.61	3.558	0.01	6.82	-310
MW-25	03/31/2011	11:55	Low Flow	19.34	4.57	2.13	7.43	11
MW-26	04/07/2011	9:20	Low Flow	17.43	5.43	3.3	7.31	85
MW-27	04/07/2011	10:45	Low Flow	21.60	2.95	3.39	7.2	73
MW-28	04/13/2011	12:00	Low Flow	22.96	2.96	2.93	7.39	-303
MW-28	09/23/2011	11:05	Low Flow	24.88	2.932	0.02	7.1	-330
MW-29	04/12/2011	15:20	Low Flow	20.14	4.79	2.92	6.84	-306
MW-29	09/27/2011	15:17	Low Flow	23.42	5.177	0.26	6.66	-340
MW-40	04/12/2011	14:20	Low Flow	21.55	2.76	2.8	7	-357
MW-41	09/28/2011	8:25	Low Flow	21.98	4.692	1.53	6.48	-230
MW-42	04/12/2011	13:15	Low Flow	19.96	5.13	4	6.76	-352
MW-43	04/14/2011	12:05	Low Flow	20.90	3.95	11.42	6.92	-357
MW-43	09/23/2011	10:25	Low Flow	23.94	3.942	0.03	6.77	-340
MW-45	04/14/2011	14:30	Low Flow	20.74	4.89	9.72	7.06	-98
MW-45	09/26/2011	12:50	Low Flow	24.98	4.659	0.09	6.79	-390
MW-46R	04/12/2011	16:10	Low Flow	19.43	4.9	2.63	6.99	-82
MW-46R	09/26/2011	13:46	Low Flow	23.29	4.555	0.08	6.71	-390
MW-49	04/12/2011	17:05	Low Flow	22.53	3.22	3.02	6.79	-368
MW-49	09/27/2011	11:17	Low Flow	24.38	2.978	0.24	6.6	-340
MW-50	04/13/2011	7:50	Low Flow	20.47	3.12	2.33	7.16	-314
MW-50	09/15/2011	14:55	Low Flow	23.23	2.656	0.15	6.91	-440
MW-52	04/01/2011	8:40	Low Flow	19.61	3.27	2.39	6.94	154
MW-52	09/15/2011	10:25	Low Flow	20.47	2.621	0.36	6.87	-350
MW-53	04/01/2011	11:30	Low Flow	21.22	3.12	2.48	7.15	43
MW-54A	04/01/2011	12:10	Low Flow	27.68	2.72	2.72	6.7	42
MW-54A	09/15/2011	13:10	Low Flow	22.21	2.494	0.18	6.34	-360
MW-54B	04/01/2011	13:00	Low Flow	20.60	2.21	5.19	7.27	75
MW-55	04/11/2011	16:00	Low Flow	19.81	5.21	4.16	7.12	26
MW-55	09/29/2011	9:20	Low Flow	21.99	4.637	0.7	6.8	-330
MW-56	04/11/2011	17:50	Low Flow	19.84	4.53	2.6	6.86	49
MW-56	09/29/2011	11:00	Low Flow	24.04	4.11	0.44	6.64	-390
MW-57	04/06/2011	9:55	Low Flow	21.15	5.55	2.83	6.83	36

Table 2 - Well Purging and Water Quality Measurement Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Well	Date	Time	Purge Method	Temperature (°C)	Conductivity (S/m)	DO (mg/L)	pH (std units)	ORP (mV)
MW-57	09/21/2011	11:36	Low Flow	21.26	8.342	0.81	6.75	-330
MW-58	04/06/2011	11:15	Low Flow	20.09	2.8	3.19	6.77	-65
MW-58	09/22/2011	13:37	Low Flow	22.61	2.56	0.17	6.56	-390
MW-59	04/12/2011	11:45	Low Flow	19.66	3.44	6.16	7.05	-214
MW-60	04/12/2011	12:30	Low Flow	19.35	4.39	3.87	6.86	-323
MW-60	09/27/2011	12:50	Low Flow	23.58	4.366	0.26	6.57	-340
MW-61	04/14/2011	9:40	Low Flow	22.70	5.25	5.58	6.89	-371
MW-61	09/16/2011	12:11	Low Flow	25.45	4.442	0.22	6.71	-410
MW-62	04/14/2011	9:00	Low Flow	21.71	2.49	3.45	6.83	-354
MW-62	09/28/2011	8:55	Low Flow	23.89	2.622	0.45	6.52	-350
MW-66	04/13/2011	11:00	Low Flow	21.05	2.17	3.24	6.93	-198
MW-66	09/16/2011	8:23	Low Flow	21.16	1.413	1.83	6.78	-280
MW-68	04/07/2011	16:00	Low Flow	20.58	2.81	4.08	7.19	132
MW-70	04/05/2011	8:25	Low Flow	16.61	6.31	1.86	7.39	-178
MW-70	09/20/2011	15:55	Low Flow	24.59	6.109	0.14	7.11	-390
MW-71	04/07/2011	15:10	Low Flow	19.42	7.05	5.18	7.16	130
MW-71	09/22/2011	10:21	Low Flow	19.94	6.16	4.54	6.8	-150
MW-72	03/28/2011	13:33	Low Flow	15.53	15.2	2.3	7.08	-121
MW-72	09/13/2011	11:00	Low Flow	23.59	13.23	0.13	6.84	-380
MW-73	03/28/2011	14:25	Low Flow	16.72	13.8	2.4	7.34	-107
MW-73	09/13/2011	12:30	Low Flow	21.12	11.17	0.21	7.12	-430
MW-74	03/28/2011	15:00	Low Flow	18.54	12.7	2.25	7.2	-47
MW-74	09/13/2011	13:20	Low Flow	23.98	11.05	0.43	6.87	-350
MW-75	03/28/2011	15:40	Low Flow	19.84	10	2.12	7.31	-97
MW-75	09/13/2011	14:05	Low Flow	23.28	8.132	0.2	7.03	-400
MW-76	03/29/2011	10:25	Low Flow	18.26	7.2	1.75	7.2	-102
MW-76	09/13/2011	15:00	Low Flow	23.90	6.941	0.08	6.87	-430
MW-77	03/28/2011	16:20	Low Flow	19.32	9	2.36	7.09	-103
MW-77	09/14/2011	9:52	Low Flow	21.98	8.568	0.02	6.87	210
MW-78	03/29/2011	9:37	Low Flow	17.28	6.67	1.7	7	-28
MW-79	03/29/2011	13:00	Low Flow	17.17	9.17	1.96	7.28	-88
MW-79	09/14/2011	9:00	Low Flow	21.02	8.599	0.5	6.88	230
MW-80	03/29/2011	13:35	Low Flow	17.71	7.12	1.87	7.28	-55
MW-81	03/29/2011	14:15	Low Flow	17.83	7.39	1.98	7.23	32
MW-82	03/29/2011	11:40	Low Flow	18.48	9.07	1.65	7.25	-118
MW-82	09/20/2011	15:16	Low Flow	29.14	18.33	0.79	6.99	-340
MW-83	03/29/2011	11:05	Low Flow	17.83	6.91	1.96	7.19	91
MW-83	09/14/2011	11:54	Low Flow	22.47	6.514	0.13	6.99	-380
MW-84	03/29/2011	12:20	Low Flow	19.17	12	1.76	7.22	-3
MW-84	09/14/2011	11:10	Low Flow	22.86	9.949	0.11	6.95	-330
MW-87	04/05/2011	9:10	Low Flow	16.93	19.3	2.53	7.38	5
MW-87	09/20/2011	15:40	Low Flow	29.14	18.33	0.79	6.99	-340
MW-88	04/05/2011	13:30	Low Flow	18.89	8.12	2.44	7.32	-77
MW-88	09/20/2011	9:39	Low Flow	21.62	7.121	0.38	7.02	-370

Table 2 - Well Purging and Water Quality Measurement Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Well	Date	Time	Purge Method	Temperature (°C)	Conductivity (S/m)	DO (mg/L)	pH (std units)	ORP (mV)
MW-89	04/07/2011	10:00	Low Flow	17.75	3.2	3.59	7.29	-56
MW-90	04/15/2011	9:25	Low Flow	19.29	3.24	18.71	6.92	-381
MW-90	09/28/2011	11:05	Low Flow	23.55	2.959	0.28	6.68	-400
MW-91	04/15/2011	8:40	Low Flow	21.71	2.35	17.39	6.75	-389
MW-91	09/28/2011	10:20	Low Flow	25.90	1.662	0.3	6.66	-380
MW-93	04/14/2011	10:35	Low Flow	20.85	2.31	17.92	6.86	-389
MW-93	09/28/2011	9:39	Low Flow	23.94	2.174	0.29	6.58	-380
MW-95	04/14/2011	16:35	Low Flow	21.01	2.53	7.26	6.98	-230
MW-96	04/15/2011	10:40	Low Flow	21.01	2.68	14.47	6.97	-383
MW-96	09/29/2011	7:55	Low Flow	23.01	2.372	0.71	6.74	-330
MW-98	04/12/2011	11:00	Low Flow	20.00	3.93	4.36	6.95	-390
MW-98	09/27/2011	10:22	Low Flow	24.01	3.728	0.23	6.67	-360
MW-99	04/13/2011	10:20	Low Flow	21.30	2.68	3.16	6.79	-353
MW-99	09/16/2011	7:30	Low Flow	20.85	2.183	0.13	6.69	-380
MW-101	04/14/2011	15:50	Low Flow	21.65	2.3	11.85	6.79	-327
MW-101	09/16/2011	11:30	Low Flow	23.11	2.042	0.22	6.64	-380
MW-103	04/13/2011	9:30	Low Flow	23.88	4.99	2.47	7.92	-323
MW-104	04/13/2011	8:50	Low Flow	14.70	2.13	3.12	7.35	-289
MW-104	09/16/2011	10:19	Low Flow	20.54	2.2	0.09	7.09	-390
MW-106	04/14/2011	15:15	Low Flow	21.99	3.74	7.07	6.96	-389
MW-106	09/27/2011	12:03	Low Flow	26.64	3.83	0.22	6.67	-370
MW-107	04/13/2011	13:55	Low Flow	20.48	2.19	3.05	7.04	-130
MW-107	09/16/2011	9:16	Low Flow	22.41	1.907	0.09	6.79	-340
MW-108	04/11/2011	12:55	Low Flow	19.79	3.82	2.86	7.01	-372
MW-108	09/27/2011	13:26	Low Flow	24.53	4.007	0.42	6.77	-340
MW-109	04/01/2011	9:45	Low Flow	22.70	3.71	2.35	7.02	-141
MW-109	09/15/2011	11:42	Low Flow	22.81	3.433	0.24	6.91	-390
MW-110	04/01/2011	10:30	Low Flow	22.40	2.39	2.41	7.17	-167
MW-110	09/15/2011	12:30	Low Flow	22.53	2.355	0.15	7.07	-390
NCL-31	04/11/2011	12:05	Low Flow	19.35	3.26	3.08	7.01	-168
NCL-31	09/27/2011	14:17	Low Flow	22.69	3.048	0.26	6.73	-320
NCL-32	04/11/2011	13:30	Low Flow	20.92	2.19	16.29	8.09	-221
NCL-33	04/11/2011	14:45	Low Flow	20.62	3.31	3.81	6.72	-28
NCL-33	09/26/2011	15:35	Low Flow	24.50	2.999	0.1	6.5	-370
NCL-44	04/11/2011	14:15	Low Flow	20.16	2.28	4.78	6.86	-166
NCL-44	09/26/2011	14:52	Low Flow	24.35	2.123	0.2	6.62	-360
NCL-49	04/08/2011	13:00	Low Flow	27.49	3.43	3.47	7.07	128
NCL-49	09/15/2011	13:55	Low Flow	25.83	3.144	2.23	6.87	-290
NP-1	04/07/2011	12:55	Low Flow	18.11	6.22	3.26	7.02	509
NP-1	09/22/2011	8:20	Low Flow	19.43	5.081	0.18	6.79	-340
NP-5	04/07/2011	11:40	Low Flow	17.63	6.13	3.51	7.33	-89

Table 2 - Well Purging and Water Quality Measurement Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Well	Date	Time	Purge Method	Temperature (°C)	Conductivity (S/m)	DO (mg/L)	pH (std units)	ORP (mV)
NP-6	04/07/2011	13:25	Low Flow	17.99	6.9	3.83	7.07	250
OCD-1R	03/31/2011	14:05	Low Flow	18.46	12.5	2.74	7.43	-124
OCD-1R	09/20/2011	10:15	Low Flow	22.58	14.29	0.46	7.11	-350
OCD-2A	03/31/2011	14:45	Low Flow	18.88	9.5	2.38	7.31	-59
OCD-2A	09/20/2011	11:03	Low Flow	21.45	6.299	0.25	7.28	-370
OCD-3	03/31/2011	15:25	Low Flow	20.1	7.2	2.67	7.22	-40
OCD-3	09/20/2011	11:36	Low Flow	22.22	4.439	0.3	7.23	-390
OCD-4	04/04/2011	10:36	Low Flow	18.44	20.2	1.46	7.36	-129
OCD-4	09/20/2011	12:20	Low Flow	23.62	16.87	0.37	7.11	-360
OCD-5	04/04/2011	11:10	Low Flow	17.78	19.4	1.66	7.45	-154
OCD-5	09/20/2011	13:25	Low Flow	22.64	16.17	0.28	7.12	-360
OCD-6	03/31/2011	9:15	Low Flow	17.02	17.6	2.43	7.21	-133
OCD-6	09/19/2011	12:31	Low Flow	20.76	14.41	0.3	7.02	-320
OCD-7AR	03/29/2011	16:05	Low Flow	18.42	13.2	2.47	7.2	-102
OCD-7AR	09/19/2011	13:10	Low Flow	23.08	11.32	0.09	6.98	-340
OCD-7B	03/29/2011	15:00	Low Flow	24.48	5.88	2.31	7.35	23
OCD-8A	04/04/2011	10:50	Low Flow	17.13	16.1	1.75	7.23	-140
OCD-8A	09/20/2011	14:00	Low Flow	23.94	13.69	0.19	6.91	-350
OCD-8B	04/04/2011	12:30	Low Flow	18.86	9.03	2.16	7.48	-193
RA-313	04/15/2011	11:10	Tap	22.52	1.44	16.5	7.9	-204
RA-1227	04/15/2011	11:35	Tap	19.11	3.5	19.87	7.65	-95
RA-3156	04/15/2011	11:55	Tap	16.50	3.6	19.99	7.74	-55
RA-3156	09/29/2011	12:05	Tap	21.49	3.116	3.72	6.91	-260
RA-4196	04/15/2011	13:00	Tap	24.42	2.78	14	7.86	-105
RA-4196	09/29/2011	11:54	Tap	29.17	2.663	1.61	7.21	-250
RA-4798	04/15/2011	13:25	Tap	19.45	1.97	12.1	7.99	-66
RA-4798	09/29/2011	11:40	Tap	19.82	1.821	1.79	7.08	-300
RW-4	04/14/2011	17:20	Low Flow	21.96	2.99	5.61	7.09	-352
RW-9	04/14/2011	12:45	Low Flow	19.26	4.05	10.82	6.99	-375
RW-10	04/14/2011	13:45	Low Flow	20.08	3.59	9.43	7.8	-158
RW-16	04/11/2011	17:20	Low Flow	18.90	6.19	2.99	6.93	-75
RW-17	04/11/2011	16:36	Low Flow	18.52	7.01	2.99	7.4	6
RW-18	04/08/2011	7:40	Low Flow	16.84	5.86	4.14	7.17	133
TEL-1	04/12/2011	8:40	Low Flow	19.74	3.8	3.48	6.9	-167
TEL-1	09/27/2011	7:50	Low Flow	21.22	3.698	0.08	6.72	-310
TEL-2	04/12/2011	9:10	Low Flow	19.55	3.63	2.75	6.8	-368
TEL-2	09/27/2011	8:29	Low Flow	22.30	3.314	0.14	6.62	-350
TEL-3	04/12/2011	9:45	Low Flow	18.68	3.17	3.24	6.8	-357
TEL-3	09/27/2011	9:06	Low Flow	21.75	2.926	0.33	6.53	-320
TEL-4	04/12/2011	10:15	Low Flow	20.09	4.33	3.22	6.77	-348
TEL-4	09/27/2011	9:40	Low Flow	23.54	3.9	0.04	6.52	-340
UG-1	03/30/2011	12:25	Low Flow	22.10	3.46	4.33	7.12	126
UG-2	03/30/2011	11:30	Low Flow	21.70	2.17	3.29	7.3	124
UG-3R	03/30/2011	13:30	Submersible	20.79	2.19	5.83	7.06	146

Table 2 - Well Purging and Water Quality Measurement Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Definitions:

°C = degrees Celsius
DO = dissolved oxygen
mg/L = milligrams per liter
mV = milliVolts
ORP = oxidation/reduction potential
S/m = Siemens per meter
std units = standard pH units

Purge Methods:

Low Flow = peristaltic pump with dedicated tubing, purged until parameters stabilized
Submersible = submersible electric pump with dedicated tubing, purged minimum of 3 well volumes
Tap = irrigation well sample collected from tap or valve nearest well

Notes:

X	Indicates that the DO concentration equal to X is suspect as the concentration of DO in air saturated water at sea level is 8.6 mg/L. The high DO concentrations are likely due to an incorrectly calibrated DO meter.

Table 3 - Groundwater Screening Levels and Se[illegible]ed Critical Groundwater Screening Level

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Analyte	NMED GW Human Health (20.6.2.3103.A)	NMED GW Domestic (20.6.2.3103.B)	NMED GW Irrigation (20.6.2.3103.C)	EPA MCL	NMED Tap Water (Table A-1)	NMED TPH (Table 6-2)	Critical Groundwater Screening Level (CGWSL)	CGWSL Source
Total Petroleum Hydrocarbons (mg/L)								
TPH - Gasoline Range Organics (GRO)							--	--
TPH - Diesel Range Organics (DRO)						2.00E-01	2.00E-01	NMED TPH
TPH - Oil Range Organics (ORO)						2.00E-01	2.00E-01	NMED TPH
VOCs (µg/L)								
1,1,1-Trichloroethane	6.00E+01			2.00E+02			6.00E+01	NMED GW Human Health (20.6.2.3103.A)
1,1,2,2-Tetrachloroethane	1.00E+01						1.00E+01	NMED GW Human Health (20.6.2.3103.A)
1,1,2,2-Tetrachloroethene	2.00E+01						2.00E+01	NMED GW Human Health (20.6.2.3103.A)
1,1,2-Trichloroethane	1.00E+01			5.00E+00			5.00E+00	EPA MCL
1,1,2-Trichloroethene	1.00E+02						1.00E+02	NMED GW Human Health (20.6.2.3103.A)
1,1-Dichloroethane	2.50E+01						2.50E+01	NMED GW Human Health (20.6.2.3103.A)
1,1-Dichloroethene				7.00E+00			7.00E+00	EPA MCL
1,2-Dibromo-3-chloropropane				2.00E-01			2.00E-01	EPA MCL
1,2-Dibromoethane (EDB)	1.00E-01			5.00E-02			5.00E-02	EPA MCL
1,2-Dichloroethane	1.00E+01			5.00E+00			5.00E+00	EPA MCL
1,2-Dichloroethene							--	--
1,2-Dichloropropane				5.00E+00			5.00E+00	EPA MCL
2-Butanone (MEK)					7.06E+03		7.06E+03	NMED Tap Water (Table A-1)
4-Methyl-2-Pentanone (MIBK)					1.99E+03		1.99E+03	NMED Tap Water (Table A-1)
Acetone					2.18E+04		2.18E+04	NMED Tap Water (Table A-1)
Benzene	1.00E+01			5.00E+00			5.00E+00	EPA MCL
Bromodichloromethane					1.17E+00		1.17E+00	NMED Tap Water (Table A-1)
Bromomethane					8.66E+00		8.66E+00	NMED Tap Water (Table A-1)
Carbon Disulfide					1.04E+03		1.04E+03	NMED Tap Water (Table A-1)
Carbon tetrachloride	1.00E+01			5.00E+00			5.00E+00	EPA MCL
Chlorobenzene				1.00E+02			1.00E+02	EPA MCL
Chlorodibromomethane (dibromochloromethane)				8.00E+01			8.00E+01	EPA MCL
Chloroethane (ethyl chloride)					2.09E+04		2.09E+04	NMED Tap Water (Table A-1)
Chloroform	1.00E+02			8.00E+01			8.00E+01	EPA MCL
Chloromethane					1.88E+02		1.88E+02	NMED Tap Water (Table A-1)
cis-1,2-Dichloroethene				7.00E+01			7.00E+01	EPA MCL
cis-1,3-Dichloropropene					4.33E+00		4.33E+00	NMED Tap Water (Table A-1)
Dibromochloromethane				8.00E+01			8.00E+01	EPA MCL
Dichlorodifluoromethane					2.03E+02		2.03E+02	NMED Tap Water (Table A-1)
Ethylbenzene	7.50E+02			7.00E+02			7.00E+02	EPA MCL
Isopropylbenzene (cumene)					6.79E+02		6.79E+02	NMED Tap Water (Table A-1)
m-Xylene					2.03E+02		2.03E+02	NMED Tap Water (Table A-1)
Methyl acetate					3.65E+04		3.65E+04	NMED Tap Water (Table A-1)
Methylene chloride (dichloromethane)	1.00E+02			5.00E+00			5.00E+00	EPA MCL
Naphthalene	3.00E+01						3.00E+01	NMED GW Human Health (20.6.2.3103.A)
tert-Butyl methyl ether (MTBE)					1.25E+02		1.25E+02	NMED Tap Water (Table A-1)
o-Xylene					2.03E+02		2.03E+02	NMED Tap Water (Table A-1)
Styrene				1.00E+02			1.00E+02	EPA MCL
Tetrachloroethene				5.00E+00			5.00E+00	EPA MCL
Toluene	7.50E+02			1.00E+03			7.50E+02	NMED GW Human Health (20.6.2.3103.A)
trans-1,2-Dichloroethene				1.00E+02			1.00E+02	EPA MCL
Trichloroethylene				5.00E+00			5.00E+00	EPA MCL

Table 3 - Groundwater Screening Levels and S\ .ed Critical Groundwater Screening Level

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Analyte	NMED GW Human Health (20.6.2.3103.A)	NMED GW Domestic (20.6.2.3103.B)	NMED GW Irrigation (20.6.2.3103.C)	EPA MCL	NMED Tap Water (Table A-1)	NMED TPH (Table 6-2)	Critical Groundwater Screening Level (CGWSL)	CGWSL Source
Trichloroethene				5.00E+00			5.00E+00	EPA MCL
Trichlorofluoromethane					1.29E+03		1.29E+03	NMED Tap Water (Table A-1)
Vinyl chloride	1.00E+00			2.00E+00			1.00E+00	NMED GW Human Health (20.6.2.3103.A)
Xylenes	6.20E+02			1.00E+04			6.20E+02	NMED GW Human Health (20.6.2.3103.A)
SVOCs (ug/L)								
1,2,4-Trichlorobenzene				7.00E+01			7.00E+01	EPA MCL
1,2-Dichlorobenzene				6.00E+02			6.00E+02	EPA MCL
1,4-Dichlorobenzene				7.50E+01			7.50E+01	EPA MCL
2,4,5-Trichlorophenol					3.65E+03		3.65E+03	NMED Tap Water (Table A-1)
2,4,6-Trichlorophenol					3.65E+01		3.65E+01	NMED Tap Water (Table A-1)
2,4-Dichlorophenol					1.10E+02		1.10E+02	NMED Tap Water (Table A-1)
2,4-Dimethylphenol					7.30E+02		7.30E+02	NMED Tap Water (Table A-1)
2,4-Dinitrophenol					7.30E+01		7.30E+01	NMED Tap Water (Table A-1)
2,4-Dinitrotoluene					2.17E+00		2.17E+00	NMED Tap Water (Table A-1)
2,6-Dinitrotoluene					3.65E+01		3.65E+01	NMED Tap Water (Table A-1)
2-Chloronaphthalene					2.92E+03		2.92E+03	NMED Tap Water (Table A-1)
2-Chlorophenol					1.83E+02		1.83E+02	NMED Tap Water (Table A-1)
3,3'-Dichlorobenzidine					1.49E+00		1.49E+00	NMED Tap Water (Table A-1)
4,6-Dinitro-2-methylphenol					2.92E+00		2.92E+00	NMED Tap Water (Table A-1)
Acenaphthene					2.19E+03		2.19E+03	NMED Tap Water (Table A-1)
Anthracene					1.10E+04		1.10E+04	NMED Tap Water (Table A-1)
Benzo(a)anthracene					2.95E-01		2.95E-01	NMED Tap Water (Table A-1)
Benzo(a)pyrene	7.00E-01			2.00E-01			2.00E-01	EPA MCL
Benzo(b)fluoranthene					2.95E-01		2.95E-01	NMED Tap Water (Table A-1)
Benzo(k)fluoranthene					2.95E+00		2.95E+00	NMED Tap Water (Table A-1)
bis(2-Chloroethyl) ether					1.19E-01		1.19E-01	NMED Tap Water (Table A-1)
bis(2-Ethylhexyl)phthalate				6.00E+00			6.00E+00	EPA MCL
Chrysene					2.95E+01		2.95E+01	NMED Tap Water (Table A-1)
Dibenz(a,h)anthracene					2.95E-02		2.95E-02	NMED Tap Water (Table A-1)
Diethyl phthalate					2.92E+04		2.92E+04	NMED Tap Water (Table A-1)
Dimethyl phthalate					3.65E+05		3.65E+05	NMED Tap Water (Table A-1)
Di-n-butyl phthalate					3.65E+03		3.65E+03	NMED Tap Water (Table A-1)
Fluoranthene					1.46E+03		1.46E+03	NMED Tap Water (Table A-1)
Fluorene					1.46E+03		1.46E+03	NMED Tap Water (Table A-1)
Hexachloro-1,3-butadiene					8.62E+00		8.62E+00	NMED Tap Water (Table A-1)
Hexachlorobenzene				1.00E+00			1.00E+00	EPA MCL
Hexachlorocyclopentadiene				5.00E+01			5.00E+01	EPA MCL
Hexachloroethane					1.68E+01		1.68E+01	NMED Tap Water (Table A-1)
Indeno(1,2,3-c,d)pyrene					2.95E-01		2.95E-01	NMED Tap Water (Table A-1)
Isophorone					7.07E+02		7.07E+02	NMED Tap Water (Table A-1)
Naphthalene	3.00E+01						3.00E+01	NMED GW Human Health (20.6.2.3103.A)
Nitrobenzene					1.22E+00		1.22E+00	NMED Tap Water (Table A-1)
N-Nitrosodiphenylamine					1.37E+02		1.37E+02	NMED Tap Water (Table A-1)
Pentachlorophenol				1.00E+00			1.00E+00	EPA MCL
Phenanthrene					1.10E+03		1.10E+03	NMED Tap Water (Table A-1)
Phenol		5.00E+00					5.00E+00	NMED GW Domestic (20.6.2.3103.B)
Pyrene					1.10E+03		1.10E+03	NMED Tap Water (Table A-1)

Table 3 - Groundwater Screening Levels and S\ .ed Critical Groundwater Screening Level

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Analyte	NMED GW Human Health (20.6.2.3103.A)	NMED GW Domestic (20.6.2.3103.B)	NMED GW Irrigation (20.6.2.3103.C)	EPA MCL	NMED Tap Water (Table A-1)	NMED TPH (Table 6-2)	Critical Groundwater Screening Level (CGWSL)	CGWSL Source
Metals (mg/L)								
Aluminum			5.00E+00				5.00E+00	NMED GW Irrigation (20.6.2.3103.C)
Arsenic	1.00E-01			1.00E-02			1.00E-02	EPA MCL
Barium	1.00E+00			2.00E+00			1.00E+00	NMED GW Human Health (20.6.2.3103.A)
Boron			7.50E-01				7.50E-01	NMED GW Irrigation (20.6.2.3103.C)
Cadmium	1.00E-02			5.00E-03			5.00E-03	EPA MCL
Chromium	5.00E-02			1.00E-01			5.00E-02	NMED GW Human Health (20.6.2.3103.A)
Cobalt			5.00E-02				5.00E-02	NMED GW Irrigation (20.6.2.3103.C)
Copper		1.00E+00		1.30E+00			1.00E+00	NMED GW Domestic (20.6.2.3103.B)
Iron		1.00E+00					1.00E+00	NMED GW Domestic (20.6.2.3103.B)
Lead	5.00E-02			1.50E-02			1.50E-02	EPA MCL
Manganese		2.00E-01					2.00E-01	NMED GW Domestic (20.6.2.3103.B)
Mercury	2.00E-03			2.00E-03			2.00E-03	NMED GW Human Health (20.6.2.3103.A)
Molybdenum			1.00E+00				1.00E+00	NMED GW Irrigation (20.6.2.3103.C)
Nickel			2.00E-01				2.00E-01	NMED GW Irrigation (20.6.2.3103.C)
Selenium	5.00E-02			5.00E-02			5.00E-02	NMED GW Human Health (20.6.2.3103.A)
Silver	5.00E-02						5.00E-02	NMED GW Human Health (20.6.2.3103.A)
Zinc		1.00E+01					1.00E+01	NMED GW Domestic (20.6.2.3103.B)
Water Quality Parameters (mg/L, unless noted)								
Chloride		2.50E+02					2.50E+02	NMED GW Domestic (20.6.2.3103.B)
Cyanide	2.00E-01			2.00E-01			2.00E-01	NMED GW Human Health (20.6.2.3103.A)
Fluoride	1.60E+00						1.60E+00	NMED GW Human Health (20.6.2.3103.A)
Nitrate (NO3 as N)	1.00E+01			1.00E+01			1.00E+01	NMED GW Human Health (20.6.2.3103.A)
pH (Std pH units)		6 to 9					6 to 9	NMED GW Domestic (20.6.2.3103.B)
Sulfate		6.00E+02					6.00E+02	NMED GW Domestic (20.6.2.3103.B)
Total Dissolved Solids		1.00E+03					1.00E+03	NMED GW Domestic (20.6.2.3103.B)

mg/L = milligrams per liter

ug/L = micrograms per liter

CGWSL = Critical Groundwater Screening Level

Heirarchy of selecting the CGWSL is as follows:

1. Lowest of either NMED GW Standard (20.6.2.3103) or EPA MCL was selected.
2. If no NMED GW Standard or EPA MCL available, then NMED Tap Water value from SSG Table A-1, if available.
3. NMED TPH screening for "unknown oil" used for both DRO and ORO range TPH.

CGWSL Source = Source for CGWSL value

EPA MCL = EPA Maximum Contaminant Level from "Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites"

NMED GW Domestic = NMED Groundwater standard for domestic exposure taken from 20.6.2.3103.B

NMED GW Human Health = NMED Groundwater standard for human health exposure taken from 20.6.2.3103.A

NMED GW Irrigation = NMED Groundwater standard for irrigation exposure taken from 20.6.2.3103.C

NMED Tap Water = New Mexico Environment Department Risk Assessment Guidance for Site Investigations and Remediation, February 2012, Tap Water Screening Level

NMED TPH = New Mexico Environment Department Risk Assessment Guidance for Site Investigations and Remediation, February 2012, TPH Screening Guidelines for Potable Groundwater

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
NCL	MW-18	Apr-09		< 0.020	**0.28**	< 0.0100	**0.0135**	< 0.0012		< 0.0100		< 0.000042		< 0.0100	
		Sep-09		< 0.0500	**0.38**	< 0.00500	**0.0118**	< 0.00500		< 0.00500		< 0.000200		**0.00821**	
		Mar-10			**0.18**	< 0.00500	**0.0178**	< 0.00500		< 0.00500		< 0.000200		**0.00748**	
		Oct-10			**0.48**	< 0.00500	**0.0147**	< 0.00500	< 0.200	< 0.00500	**0.156**	< 0.000200	**0.00747 J**	**0.00716**	**0.0161**
		Apr-11			**0.19 J**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.027**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11			**0.19**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.192**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
	MW-54A	Apr-09			**0.42**	< 0.0100	**0.0167**	< 0.0012		< 0.0100				< 0.0050	
		Oct-09			**0.30**										
		Oct-09	FD		**0.29**										
		Apr-10			**0.40**	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10			**0.32**	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	**0.467**			< 0.0500	
		Apr-11			**0.47**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.493**			< 0.025	
		Sep-11			**0.25**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.523**			< 0.0250	
	MW-54B	Apr-10		< 0.0500	**0.33**	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.112**			< 0.025	
	MW-108	Oct-09		**2.55**	**8.2**										
		Mar-10			**1.6**	**0.00555**	**0.0479**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10			**5.9**	**< 0.0250**	**0.155**	**0.0387**		**0.0361**		< 0.000200		< 0.0250	
		Oct-10			**1.8**	**< 0.0250**	**0.0615**	< 0.0250	< 1.00	**< 0.0250**	**0.0856**			< 0.0250	
		Apr-11			**0.79 J**	**< 0.025**	**0.0524**	< 0.025	< 1	**< 0.025**	**0.0801**			< 0.025	
		Apr-11	FD		**1.3 J**	**< 0.025**	**0.055**	< 0.025	< 1	**< 0.025**	**0.0748**			< 0.025	
		Sep-11			**0.47**	**< 0.0250**	**0.0528**	< 0.0250	< 1.00	**< 0.0250**	**0.0874**			< 0.0250	
	NCL-31	Mar-10			**0.65**	**0.00731**	**0.0246**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10			**0.56**	**< 0.0250**	**0.0312**	< 0.0250	< 1.00	**< 0.0250**	**1.16**			< 0.0250	
		Apr-11			**0.32 J**	**< 0.025**	**0.0358**	< 0.025	< 1	**< 0.025**	**2.21**		< 0.025	< 0.025	< 0.025
		Sep-11			**0.11**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**1.90**			< 0.0250	
	NCL-32	Apr-09			**2.1**	< 0.0100	**0.143**	**0.0442**		**0.0294**		< 0.000042		< 0.0050	
		Sep-09			**0.21**	**0.0389**	**1.15**	**0.383**	**55.5**	**0.267**	**1.84**	**0.000223**		**0.00667**	
		Mar-10		< 0.050	**0.0664**	**1.74**	**0.593**		**0.415**		< 0.000200		**0.0125**		
		Oct-10			**0.48**	**< 0.0250**	**0.0413**	< 0.0250	< 1.00	**< 0.0250**	**0.149**			< 0.0250	
	NCL-33	Apr-09			**0.52**	< 0.0100	**0.0229**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09			**0.60**	< 0.00500	**0.0240**	< 0.00500	**3.70**	< 0.00500	**0.127**	< 0.000200		< 0.00500	
		Mar-10			**0.64**	< 0.00500	**0.0263**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10			**0.57**	**< 0.0250**	**0.0253**	< 0.0250	**4.35**	**< 0.0250**	**0.126**			< 0.0250	
		Apr-11			**0.54 J**	**< 0.025**	< 0.025	< 0.025	**2.13**	**< 0.025**	**0.115**			< 0.025	
		Sep-11			**0.23**	**< 0.0250**	< 0.0250	< 0.0250	**2.61**	**< 0.0250**	**0.0955**			< 0.0250	
	NCL-34	Apr-09			**0.12**	< 0.0100	**0.608**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09			**1.7**	< 0.00500	**0.317**	< 0.00500	< 0.200	< 0.00500	**0.0337**	< 0.000200		< 0.00500	
		Mar-10			**0.95 J**	< 0.00500	**0.370 J**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Mar-10	FD		**1.8 J**	**0.00568**	**0.0538 J**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10			**0.95**	**< 0.0250**	**0.349**	< 0.0250	< 1.00	**< 0.0250**	**0.0393**			< 0.0250	
		Oct-10	FD		**1.3**	< 0.00500	**0.342**	< 0.00500	< 0.200	< 0.00500	**0.0339**			< 0.00500	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
NCL (continued)	NCL-44	Apr-09			**0.62**	**0.0436**	**0.0273**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09			**0.66**	**0.0598**	**0.0276**	< 0.00500	**1.52**	< 0.00500	**0.756**	< 0.000200		< 0.00500	
		Mar-10			**0.60**	**0.0440**	**0.0298**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10			**0.63**	**0.0543 J**	**0.0267**	< 0.0250	**1.40**	**< 0.0250**	**0.716**			< 0.0250	
		Apr-11			**0.51 J**	**0.0584**	**0.0297**	< 0.025	**1.78**	**< 0.025**	**0.798**			< 0.025	
		Sep-11			**0.063**	**0.0506**	< 0.0250	< 0.0250	**1.33**	**< 0.0250**	**0.615**			< 0.0250	
	NCL-49	Apr-09			< 0.020	< 0.0018	**0.0117**	< 0.0012		< 0.0100				< 0.0100	
		Apr-09	FD		< 0.020	< 0.0018	**0.0115**	< 0.0012		< 0.0100				< 0.0100	
		Oct-09			< 0.050										
		Apr-10			< 0.050	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10			< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	< 0.0500			< 0.0500	
		Apr-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
		Sep-11			< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
	RW-17A	Mar-10		< 0.0500	**0.13**	**0.00876**	**0.0224**	< 0.00500		**0.00885**		< 0.000200		**0.00820**	
TEL	TEL-1	Apr-09		**0.567**	**1.7**	< 0.0100	**0.0125**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Apr-09	FD	**0.580**	**3.2**	**0.0107**	**0.0132**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.400**	**2.9**	**0.00662**	**0.0112**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.210**	**1.9**	< 0.00500	**0.0130**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**0.430**	**5.0 J**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.0818**			< 0.0250	
		Apr-11		**0.28**	**2.4 J**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.0796**			< 0.025	
		Sep-11		**0.173**	**1.8**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.0564**			< 0.0250	
	TEL-2	Apr-09		**5.08**	**3.3**	**0.0112**	**0.0761**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**5.05**	**4.3**	**0.00979**	**0.0547**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**5.62**	**7.8**	**0.00999**	**0.0753**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**4.67**	**5.4 J**	**< 0.0250**	**0.0452**	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
		Apr-11		**5.15**	**2.9 J**	**< 0.025**	**0.0528**	< 0.025	< 1	**< 0.025**	**0.0258**			< 0.025	
		Sep-11		**4.74**	**0.88**	**< 0.0250**	**0.0518**	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
	TEL-3	Apr-09		**2.04**	**2.6**	< 0.0100	**0.0177**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.814**	**1.4**	< 0.00500	**0.0140**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.556**	**2.3 J**	< 0.00500	**0.0109**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10	FD	**0.603**	**1.3 J**	< 0.00500	**0.0109**	< 0.00500		< 0.0100		< 0.000200		< 0.00500	
		Oct-10		**0.688**	**1.4**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
		Apr-11		**0.778**	**1 J**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
		Sep-11		**0.558**	**0.25**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
	TEL-4	Apr-09		**2.61**	**1.8**	**0.0120**	**0.0409**	**0.0567**		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**1.92**	**1.9**	**0.0129**	**0.0349**	**0.0118**		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**1.65**	**3.6**	**0.00810**	**0.0269**	**0.00710**		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**1.70**	**2.0**	**< 0.0250**	< 0.0250	**0.0648**	< 1.00	**< 0.0250**	**1.02**			< 0.0250	
		Apr-11		**1.7**	**1.5 J**	**< 0.025**	**0.0329**	**0.0424**	< 1	**< 0.025**	**1.11**			< 0.025	
		Sep-11		**1.97**	**1.3**	**< 0.0250**	**0.0281**	**0.0912**	< 1.00	**< 0.0250**	**0.728**			< 0.0250	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
EP	MW-1R	Apr-09			< 0.020	< 0.0100	**0.0250**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09			< 0.050	< 0.00500	**0.0200**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10			**0.98**	< 0.0100	**0.0204**	< 0.0100		< 0.0100		< 0.000200		**0.0113**	
		Mar-11			< 0.05	**< 0.025**	< 0.025	< 0.025	**2.29**	**< 0.025**	**1.58**			< 0.025	
	MW-2A	Apr-09		< 0.0500	**0.099**	**0.0142**	**0.0266**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Apr-09		**5.78**	**2.2**	**0.302**	**0.0141**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09			**0.094**	**0.0131**	**0.0199**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		< 0.0500	< 0.050	**0.0187**	**0.0236**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		< 0.0500	< 0.050	**< 0.0250**	**0.0343**	< 0.0250	**7.90**	**< 0.0250**	**4.00**			< 0.0250	
		Oct-10	FD	< 0.0500	**3.6 J**	**< 0.0250 UJ**	**0.0332**	< 0.0250	**7.45 J**	**< 0.0250**	**3.68 J**			< 0.0250	
		Mar-11		< 0.05	**0.069**	**< 0.025 UJ**	**0.0254**	< 0.025	**2.34**	**< 0.025**	**2.42**			< 0.025	
		Sep-11		< 0.0500	< 0.050	**0.0370**	**0.0201**	< 0.00500	**6.20**	< 0.00500	**1.38**			< 0.00500	
	MW-2B	Apr-10			< 0.050	< 0.0100	**0.0113**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
	MW-3	Apr-09		**0.270**	**1.0**	**0.0300**	**0.0145**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.447**	**1.3**	**0.0413**	**0.0152**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.201**	**1.2**	**0.0278**	**0.0130**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**0.526**	**1.4**	**0.0524**	**0.0164**	< 0.00500	**1.34**	< 0.0100	**1.47**			< 0.00500	
		Mar-11		**0.291**	**1.7**	**0.0348**	< 0.025	< 0.025	< 1	**< 0.025**	**1.05**			< 0.025	
		Sep-11		**0.271**	**0.55**	**0.0484**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**2.12**			< 0.0250	
	MW-4A	Apr-09		**0.328**	**0.79**	**0.0930**	**0.0146**	< 0.0012		< 0.0100				< 0.0050	
		Sep-09		**0.339**	**0.97**	**0.157**	**0.0127**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.236**	< 0.050	**0.0748**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-10	FD	**0.268**	**1.1**	**0.0812**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10													
		Oct-10		**0.436**	**0.56 J**	**0.113 J**	**0.0137**	< 0.00500	**2.79 J**	< 0.00500	**2.13 J**			< 0.00500	
		Apr-11		**0.296**	**1.3**	**0.0934**	< 0.025	< 0.025	**2.38**	**< 0.025**	**1.97**			< 0.025	
		Sep-11		**0.223**	**0.50**	**0.210**	< 0.0250	< 0.0250	**4.03**	**< 0.0250**	**2.11**			< 0.0250	
	MW-4B	Apr-10			**0.57**	**0.0730**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-11		< 0.05	**0.35**	**0.0409**	< 0.025	< 0.025	< 1	**< 0.025**	**0.965**			< 0.025	
	MW-5A	Sep-09		**5.70**	**4.6**	**0.232**	**0.0143**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Sep-09	FD	**5.54**	**4.9**	**0.235**	**0.0146**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**4.34**	**3.4**	**0.206**	**0.0130**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**4.67**	< 0.050	**0.253**	< 0.0250	< 0.0250	**13.7**	**< 0.0250**	**0.980**			< 0.0250	
		Apr-11		**4.33**	**6.5**	**0.205**	< 0.025	< 0.025	**13.6**	**< 0.025**	**1.19**			< 0.025	
		Sep-11		**3.53**	**1.9**	**0.164**	< 0.0250	< 0.0250	**8.57**	**< 0.0250**	**1.21**			< 0.0250	
	MW-5B	Apr-10			**6.2**	**0.208**	< 0.0100	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-11		**0.0597**	**1.3**	**0.123**	< 0.025	< 0.025	< 1	**< 0.025**	**0.611**			< 0.025	
	MW-6A	Apr-09		**0.410**	**1.5**	**0.0141**	**0.0142**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.264**	**1.5**	**0.0112**	**0.0126**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.139**	**1.1**	**0.0102**	**0.0140**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Mar-11		**0.158**	**1.5**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.258**			< 0.025	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
EP (continued)	MW-6B	Apr-10			**0.084**	**0.0152**	**0.0168**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Mar-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**1.3 J**			< 0.025	
	MW-7A	Apr-09		**0.602**	**0.51**	**0.0404**	**0.0157**	< 0.0012		< 0.0100		< 0.000200		< 0.0050	
		Sep-09		**0.510**	**0.84**	**0.0325**	**0.0146**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.462**	**0.52**	**0.0335**	**0.0164**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**0.483**	**0.39**	**0.0331**	**0.0164**	< 0.0100	**5.72**	< 0.0100	**0.402**			< 0.0100	
		Apr-11		**0.405**	**0.89**	**0.0353**	< 0.025	< 0.025	**6.64**	**< 0.025**	**0.409**			< 0.025	
		Sep-11		**0.320**	**0.38**	**< 0.0250**	< 0.0250	< 0.0250	**3.73**	**< 0.0250**	**0.366**			< 0.0250	
	MW-7B	Apr-10			**0.11 J**	**0.0136**	**0.0129**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-11		< 0.05	**0.06**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.395**			< 0.025	
	MW-10	Apr-09		**1.51**	**0.97**	**0.0250**	**0.0355**	< 0.0100		< 0.0100				< 0.0050	
		Sep-09		**1.23**	**1.1**	**0.0197**	**0.00999**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**1.26**	**0.14 J**	**0.0201**	< 0.0250	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Jun-10				**0.0204**									
		Oct-10		**1.22**	**0.50**	**0.0231**	**0.0114**	< 0.00500	< 0.200	< 0.0100	**2.50**			< 0.00500	
		Apr-11		**0.954**	**1.2**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**2.36**			< 0.025	
		Sep-11		**0.925**	**0.47**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**2.08**			< 0.0250	
		Sep-11	FD	**0.853**	**0.44**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**2.01**			< 0.0250	
	MW-11A	Apr-09		< 0.0500	< 0.020	< 0.0100	**0.0314**	< 0.0012		< 0.0100		< 0.000200		< 0.0050	
		Sep-09		< 0.0500	< 0.050	< 0.0100	**0.0319**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-10		< 0.0500	< 0.050	**< 0.0250**	**0.0260**	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-10	FD	< 0.0500	< 0.050 UJ	**< 0.0250**	**0.0285**	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Mar-11		< 0.05	< 0.05	**< 0.025**	**0.029**	< 0.025	**6.29**	**< 0.025**	**1.7**			< 0.025	
	MW-11B	Apr-10			< 0.050 UJ	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Mar-11		< 0.05	< 0.05	**< 0.025**	**0.0262**	< 0.025	< 1 UJ	**< 0.025**	**0.168 J**			< 0.025	
	MW-15	Apr-09		**0.515**	**0.67**	**0.0958**	**0.0321**	< 0.0012		< 0.00080				< 0.0050	
		Sep-09		**0.108**	**0.16**	**0.0185**	**0.0201**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.393**	**0.070**	**0.0433**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Mar-11		**0.406**	**0.7**	**0.0422**	**0.035**	< 0.025	< 1	**< 0.025**	**2.35**			< 0.025	
	MW-18A	Apr-09			**0.24**	< 0.0100	**0.0183**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09			**0.24**	**0.00873**	**0.0172**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10			< 0.050	**0.0144 UB**	**0.0213**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Jun-10				**0.0115**									
		Oct-10			**0.19**	< 0.0100	**0.0218**	< 0.0100	**2.75**	**< 0.0250**	**2.11**	< 0.000200	**0.0208**	< 0.0100	< 0.0100
		Apr-11			**0.31**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**1.84**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11			**0.12**	**0.00757**	**0.0200**	< 0.00500	**5.17**	< 0.00500	**2.02**	< 0.000200	**0.00509**	< 0.00500	< 0.00500
	MW-18B	Apr-10			< 0.050	**0.0126**	**0.0131**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-11		< 0.05	**0.081**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.396**			< 0.025	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
EP (continued)	MW-22A	Apr-09		**6.87**	**2.8**	**0.0561**	**0.0162**	< 0.0012		< 0.0100				< 0.0050	
		Sep-09		**6.01**	**3.0**	**0.0505**	**0.0154**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**6.18**	**2.4**	**0.0514**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-10	FD	**6.18**	**3.1**	**0.0518**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		**6.21**	**1.1**	**0.0600**	**0.0158**	< 0.00500	**4.04**	< 0.00500	**5.30 J**			< 0.00500	
		Apr-11		**5.41**	**3.1**	**0.0549**	< 0.025	< 0.025	**5.59**	**< 0.025**	**5.49**			< 0.025	
		Sep-11		**5.62**	**1.8**	**0.0462**	< 0.0250	< 0.0250	**3.12**	**< 0.0250**	**4.14**			< 0.0250	
	MW-22B	Apr-10			**1.3 J**	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-11		**0.244**	**1.3**	**0.0295**	< 0.025	< 0.025	< 1	**< 0.025**	**0.838**			< 0.025	
	MW-70	Apr-09		**1.42**	**0.80**	**0.0213**	**0.0148**	< 0.0012		< 0.0100		< 0.000200		< 0.0050	
		Sep-09		**1.21**	**0.28**	**0.0169**	**0.0164**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-10		**1.18**	< 0.062	**0.0237**	**0.0164**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Jun-10				**0.0211**									
		Oct-10		**1.36**	**0.32**	**0.0202**	**0.0164**	< 0.0100	**3.29**	< 0.0100	**0.279**			< 0.0100	
		Apr-11		**1.18**	**0.46**	**< 0.025**	< 0.025	< 0.025	**4.05**	**< 0.025**	**0.411**			< 0.025	
		Sep-11		**1.30**	**0.23**	**< 0.0250**	< 0.0250	< 0.0250	**3.11**	**< 0.0250**	**0.233**			< 0.0250	
	MW-72	Mar-09		**110**	**0.56**	**0.0909**	**0.0147**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09		**0.299**	**0.49**	**0.125**	**0.0180**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.252**	**0.42**	**0.0807**	**0.0139**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**0.322**	**0.16**	**0.113**	< 0.0250	< 0.0250	**25.5**	**< 0.0250**	**4.57**			< 0.0250	
		Mar-11		**0.193**	**0.58**	**0.0933**	< 0.025	< 0.025	**27.4**	**< 0.025**	**5.35**			< 0.025	
		Sep-11		**0.189**	**0.22**	**0.0862**	**0.0151**	< 0.0100	**13.9**	< 0.0100	**3.99**			< 0.0100	
	MW-73	Mar-09		**12.0**	**0.98**	**0.107**	**0.0116**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09		**0.226**	**1.3**	**0.112**	**0.0125**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.545**	**1.2**	**0.110**	< 0.0100	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**1.03**	**0.66**	**0.111**	< 0.0250	< 0.0250	**6.64**	**< 0.0250**	**3.02**			< 0.0250	
		Mar-11		**0.758**	**2**	**0.122**	< 0.025	< 0.025	**10.4**	**< 0.025**	**3.46**			< 0.025	
		Sep-11		**1.31**	**0.83**	**0.114**	**0.0651**	< 0.0100	**9.97**	< 0.0100	**2.82**			< 0.0100	
	MW-74	Mar-09		**6.87**	**6.0**	**0.127**	**0.0141**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09		**1.57**	**8.4**	**0.102**	**0.0163**	< 0.00500		< 0.00500		< 0.000200		**0.0187**	
		Apr-10		**1.35**	**9.9**	**0.0935**	**0.0132**	< 0.0100		< 0.0100		< 0.000200		**0.0463**	
		Apr-10	FD	**1.27**	**10**	**0.0905**	**0.0117**	< 0.0100		< 0.0100		< 0.000200		**0.0426**	
		Oct-10		**1.45**	**11 J**	**0.0820**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**2.24**			**0.0540**	
		Mar-11		**1.54**	**9.5**	**0.139**	< 0.025	< 0.025	**1.87**	**< 0.025**	**2.98**			< 0.025	
		Sep-11		**1.65**	< 0.050	**0.130**	**0.0130**	< 0.0100	< 1.00	< 0.0100	**2.51**			**0.0153**	
	MW-75	Mar-09		**5.59**	**5.8**	**0.337**	**0.0177**	< 0.0100		< 0.00080		< 0.000042		< 0.0050	
		Sep-09		**3.84**	**6.2**	**0.365**	**0.0140**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Sep-09	FD	**3.76**	**6.0**	**0.374**	**0.0149**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**2.56**	**6.3**	**0.294 J**	**0.0164**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**2.74**	**3.0 J**	**0.362**	**0.0141**	< 0.0100	**2.97**	< 0.0100	**1.04**			< 0.0100	
		Mar-11		**1.79**	**6.1**	**0.278**	< 0.025	< 0.025	**2.42**	**< 0.025**	**0.945**			< 0.025	
		Sep-11		**2.15**	**2.8**	**0.325**	**0.0124**	< 0.0100	**1.85**	< 0.0100	**0.833**			< 0.0100	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
EP (continued)	MW-76	Mar-09		**1.44**	**4.2**	**0.0627**	**0.0136**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**1.99**	**6.5**	**0.0723**	**0.0135**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.780**	**3.8**	**0.0774**	**0.0137**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**0.701**	**2.6**	**0.0737**	**0.0148**	< 0.00500	**2.46**	< 0.0100	**0.597 J**			< 0.00500	
		Mar-11		**0.617**	**2.6**	**0.0702**	< 0.025	< 0.025	**2.56**	**< 0.025**	**0.604**			< 0.025	
		Sep-11		**0.613**	**1.6**	**0.0622**	< 0.0250	< 0.0250	**< 2.50**	**< 0.0250**	**0.546**			< 0.0250	
	MW-77	Mar-09		**2.14**	**5.4**	**0.0931**	**0.0131**	< 0.0100		< 0.00080		< 0.000042		< 0.0050	
		Sep-09		**1.53**	**4.8**	**0.0856**	**0.0129**	< 0.00500		< 0.00500		< 0.000200		**0.00574**	
		Apr-10		**0.986**	**6.1**	**0.0775**	**0.0128**	< 0.0100		< 0.0100		< 0.000200		**0.0120**	
		Oct-10		**1.18**	**5.8 J**	**0.0769**	**0.0138**	< 0.00500	**4.30**	**< 0.0250**	**0.637 J**	< 0.000200	**0.0176**	**0.00667**	< 0.00500
		Mar-11		**1.45**	**5.7**	**0.084**	< 0.025	< 0.025	**3.84**	**< 0.025**	**0.877**	< 0.0002	< 0.025	< 0.025	< 0.025
		Mar-11	FD	**1.42**	**5.2**	**0.0832**	< 0.025	< 0.025	**3.8**	**< 0.025**	**0.868**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11		**1.19**	**3.3**	**0.0607**	< 0.0250	< 0.0250	**4.57**	**< 0.0250**	**0.556**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
	MW-78	Mar-09		**0.726**	**7.2**	**0.0267**	**0.0211**	**0.0242**		< 0.00080		< 0.000042		< 0.0050	
		Sep-09		**0.628**	**5.7**	**0.0268**	**0.0328**	**0.0421**		< 0.00500		< 0.000200		**0.00693**	
		Apr-10		**0.185**	**5.7**	**0.0155 UB**	**0.0306**	**0.0458**		< 0.0100		< 0.000200		**0.0200**	
		Jun-10				**0.0216**									
		Mar-11		**0.565**	**4.9**	**< 0.025**	**0.0329**	**0.0467**	**5.24**	**< 0.025**	**0.634**			< 0.025	
	MW-79	Mar-09	FD	**0.229**	**0.57**	**0.0230**	**0.0175**	< 0.0100		< 0.0100		< 0.000042		< 0.0100	
		Mar-09		**0.235**	**0.54**	**0.0207**	**0.0186**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.183**	**0.51**	**0.0165**	**0.0182**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.156**	**0.34**	**0.0148**	**0.0184**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**0.116**	**0.13**	**0.0194**	**0.0183**	< 0.0100	**3.03**	< 0.0100	**6.05**			< 0.0100	
		Mar-11		**0.0756**	**0.3**	**0.0286**	< 0.025	< 0.025	**4.15**	**< 0.025**	**4.88**			< 0.025	
		Sep-11		**0.290**	**0.52**	**< 0.0250**	< 0.0250	< 0.0250	**< 2.50**	**< 0.0250**	**1.97**			< 0.0250	
	MW-80	Mar-09		**0.0528**	**0.11**	**0.0111**	**0.0157**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.0870**	**0.15**	**0.0146**	**0.0173**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		< 0.0500	< 0.050	< 0.0100	**0.0157**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Mar-11		< 0.05	**0.06**	**< 0.025**	< 0.025	< 0.025	**2.44**	**< 0.025**	**2.49**			< 0.025	
	MW-81	Mar-09		**0.138**	**0.59**	**0.0164**	**0.0185**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.135**	**0.34**	**0.0114**	**0.0186**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.0892**	**0.54**	**0.0153**	**0.0158**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Mar-11		**0.0716**	**0.53**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**1.46**			< 0.025	
	MW-82	Mar-09		**1.66**	**2.6**	**0.198**	**0.0255**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**1.61**	**3.0**	**0.184**	**0.0214**	< 0.00500		< 0.00500		< 0.000200		**0.00534**	
		Apr-10		**1.22**	**4.2**	**0.211**	**0.0379**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Mar-11		**1.45**	**3.7**	**0.158**	**0.0325**	< 0.025	**2.64**	**< 0.025**	**1.6**			< 0.025	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
EP (continued)	MW-83	Mar-09		**5.32**	**7.2**	**0.133**	**0.0159**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**2.22**	**7.3**	**0.0690**	**0.0185**	< 0.00500		< 0.00500		< 0.000200		**0.00547**	
		Apr-10		**2.18**	**5.5**	**0.0825**	**0.0162**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Jun-10				**0.0519**									
		Oct-10		**0.950**	**7.0 J**	**0.0308**	**0.0270**	< 0.00500	**1.25**	< 0.0100	**0.465**			**0.0125**	
		Mar-11		**1.78**	**3.4**	**0.0801**	< 0.025	< 0.025	**5.74**	**< 0.025**	**0.473**			< 0.025	
		Sep-11		**1.32**	**1.3**	**0.0696**	< 0.0250	< 0.0250	**9.33**	**< 0.0250**	**0.398**			< 0.0250	
	MW-84	Mar-09		**33.9**	**11**	**0.111**	**0.0162**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**1.36**	**10**	**0.143**	**0.0173**	< 0.00500		< 0.00500		< 0.000200		**0.00769**	
		Apr-10		**0.813**	**9.3**	**0.0868**	**0.0161**	< 0.0100		< 0.0100		< 0.000200		**0.0112**	
		Oct-10		**1.41**	**7.5 J**	**0.157**	**0.0147**	< 0.00500	**4.82**	**< 0.0250**	**3.90**			**0.00809**	
		Mar-11		**0.883**	**8.9**	**0.108**	< 0.025	< 0.025	**1.37**	**< 0.025**	**2.54**			< 0.025	
		Sep-11		**1.23**	**3.4**	**0.124**	< 0.0250	< 0.0250	**3.99**	**< 0.0250**	**2.44**			< 0.0250	
	MW-87	Apr-09		**0.0518**	**0.27**	**0.0125**	**0.0199**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.0909**	**0.25**	**0.0153**	**0.0210**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		< 0.0500	< 0.050	**0.0159**	**0.0188**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**0.0764**	**0.12**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**1.62 J**			< 0.0250	
		Oct-10	FD	**0.0883**	**0.12**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250 UJ**	**1.68 J**			< 0.0250	
		Apr-11		< 0.05	**0.28**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.224**			< 0.025	
		Sep-11		< 0.0500	**0.11**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**1.54**			< 0.0250	
	MW-88	Apr-09		**0.298**	**0.40**	**0.0140**	< 0.0100	< 0.0012		< 0.0100				< 0.0050	
		Apr-09	FD	**0.301**	**0.45**	**0.0103**	< 0.0100	< 0.0012		< 0.0100				< 0.0050	
		Sep-09		**0.242**	**0.54**	**0.0123**	**0.00995**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Sep-09	FD	**0.226**	**0.43**	**0.0118**	**0.00980**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.212**	**0.39**	**0.0110**	**0.0102**	< 0.00500		**< 0.0250**		< 0.000200		< 0.00500	
		Oct-10		**0.158**	< 0.050	**0.0123**	**0.0101**	< 0.0100	< 0.400	< 0.0100	**0.555**			< 0.0100	
		Apr-11		**0.12**	**0.3**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.72**			< 0.025	
		Apr-11	FD	**0.119**	**0.38**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.7**			< 0.025	
		Sep-11		**0.134**	**0.25**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.519**			< 0.0250	
	OCD-1R	Apr-09		**0.0552**	**0.054**	< 0.0100	**0.0193**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Apr-10		< 0.0500	**0.083 J**	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		< 0.0500	**0.066**	**0.0103**	**0.0228**	< 0.0100	**4.81**	< 0.0100	**2.78**			< 0.0100	
		Mar-11		< 0.05	**0.083**	**< 0.025**	< 0.025	< 0.025	**4.46**	**< 0.025**	**2.48**			< 0.025	
		Sep-11		< 0.0500	**0.062**	**< 0.0250**	< 0.0250	< 0.0250	**4.36**	**< 0.0250**	**2.18**			< 0.0250	
	OCD-2A	Mar-09	FD	< 0.020	< 0.020	< 0.0100	**0.0257**	< 0.0012		< 0.00080		< 0.000042		**0.0118**	
		Apr-09		< 0.020	< 0.020	< 0.0100	**0.0251**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09		< 0.0500	< 0.050	< 0.00500	**0.0266**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		< 0.0500	< 0.050 UJ	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		< 0.0500	< 0.050	< 0.0100	**0.0248**	< 0.0100	**3.99**	< 0.0100	**1.50**			< 0.0100	
		Mar-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	**1.24**	**< 0.025**	**0.752**			< 0.025	
		Mar-11	FD	< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	**1.22**	**< 0.025**	**0.734**			< 0.025	
		Sep-11		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	**2.90**	**< 0.0250**	**1.05**			< 0.0250	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
EP (continued)	OCD-2B	Apr-10			< 0.050 UJ	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
	OCD-3	Apr-09		< 0.020	< 0.020	< 0.0100	**0.0223**	< 0.0012		< 0.00080		< 0.000042		< 0.0100	
		Sep-09		< 0.0500	< 0.050	< 0.00500	**0.0214**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		< 0.0500	< 0.050 UJ	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		< 0.0500	< 0.050	< 0.0100	**0.0193**	< 0.0100	**3.65**	< 0.0100	**0.296**			< 0.0100	
		Mar-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	**1.11**	**< 0.025**	**0.181**			< 0.025	
		Sep-11		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	**2.15**	**< 0.0250**	**0.250**			< 0.0250	
	OCD-4	Apr-09		< 0.020	< 0.020	< 0.0100	**0.0231**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		< 0.0500	< 0.050	< 0.0100	**0.0222**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-10		< 0.0500	< 0.050 UJ	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		< 0.0500	< 0.050	**< 0.0250**	**0.0263**	< 0.0250	**5.05**	**< 0.0250**	**0.274**			< 0.0250	
		Apr-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	**5**	**< 0.025**	**0.272**			< 0.025	
		Sep-11		< 0.0500	< 0.050	**< 0.0250**	**0.0258**	< 0.0250	**2.28**	**< 0.0250**	**0.193**			< 0.0250	
	OCD-5	Apr-09		**0.263**	**0.22**	**0.0115**	**0.0238**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.319**	**0.21**	< 0.0100	**0.0215**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-10		**0.162**	**0.094 J**	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		< 0.0500	< 0.050	**< 0.0250**	**0.0265**	< 0.0250	**3.57**	**< 0.0250**	**0.334**			< 0.0250	
		Apr-11		**0.0588**	**0.056**	**< 0.025**	< 0.025	< 0.025	**4.04**	**< 0.025**	**0.318**			< 0.025	
		Sep-11		**0.178**	**0.061**	**< 0.0250**	< 0.0250	< 0.0250	**3.70**	**< 0.0250**	**0.371**			< 0.0250	
	OCD-6	Apr-09		**0.527**	**0.83**	**0.0456**	**0.0168**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.486**	**0.89**	**0.0436**	**0.0170**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.307**	**0.77**	**0.0299**	**0.0167**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**0.536**	**0.75**	**0.0469**	< 0.0250	< 0.0250	**11.6**	**< 0.0250**	**2.24**			< 0.0250	
		Mar-11		**0.434**	**1.1**	**0.0366**	< 0.025 UJ	< 0.025	**8.68**	**< 0.025**	**2.14**			< 0.025	
		Sep-11		**0.409**	**0.41**	**0.0317**	< 0.0250	< 0.0250	**10.2**	**< 0.0250**	**1.71**			< 0.0250	
	OCD-7A	Apr-09		**1.35**	**1.7**	**0.318**	**0.0162**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**1.15**	**1.7**	**0.262**	**0.0151**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Sep-09	FD	**1.14**	**1.5**	**0.236**	**0.0137**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-10		**1.01**	**2.2**	**0.254**	**0.0151**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**1.28**	**1.4**	**0.270**	< 0.0250	< 0.0250	**10.8**	**< 0.0250**	**3.28**			< 0.0250	
		Mar-11		**1.17**	**2**	**0.319**	< 0.025	< 0.025	**11.2**	**< 0.025**	**4.32**			< 0.025	
		Sep-11		**1.04**	**0.68**	**0.252**	< 0.0250	< 0.0250	**11.3**	**< 0.0250**	**3.16**			< 0.0250	
	OCD-7B	Apr-10			< 0.050	< 0.0100	**0.0302**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-10	FD		< 0.050	< 0.0100	**0.0319**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Mar-11		< 0.05	**0.074**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.638**			< 0.025	
	OCD-8A	Apr-09		**1.07**	**0.93**	**0.105**	**0.0140**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**0.757**	**1.6**	**0.132**	**0.0165**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.826**	**1.2**	**0.110**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		**1.14**	**1.3**	**0.135**	< 0.0250	< 0.0250	**10.7**	**< 0.0250**	**3.89**	< 0.000200	**0.0363**	< 0.0250	< 0.0250
		Apr-11		**0.938**	**2.3**	**0.131**	< 0.025	< 0.025	**6.9**	**< 0.025**	**4.26**	< 0.0002	**0.0271**	< 0.025	< 0.025
		Apr-11	FD	**0.928**	**2.2**	**0.13**	< 0.025	< 0.025	**6.54**	**< 0.025**	**4.2**	< 0.0002	**0.0255**	< 0.025	< 0.025
		Sep-11		**0.857**	**0.87**	**0.119**	< 0.0250	< 0.0250	**4.24**	**< 0.0250**	**3.17**	< 0.000200	< 0.0250	< 0.0250	< 0.0250

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
EP (continued)	OCD-8B	Apr-10			**0.35 J**	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-11		< 0.05	**0.64**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.452**			< 0.025	
TMD	MW-8	Apr-09			< 0.020	< 0.0100	**0.0141**	**0.0137**		< 0.00080		< 0.000042		**0.0139**	
		Oct-09			< 0.050										
		Apr-10			< 0.050	**< 0.0250**	< 0.0250	**0.0462**		**< 0.0250**		< 0.000200		**0.0280**	
		Oct-10		< 0.0500	< 0.050	< 0.0100	**0.0154**	**0.0521**	< 0.400	< 0.0100	**0.661**			**0.0278**	
		Apr-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.778**			**0.0338**	
		Sep-11		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.606**			**0.0449**	
	MW-16	Apr-09			< 0.020	< 0.0100	**0.0188**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Apr-09	FD		< 0.050	< 0.0100	**0.0204**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09			< 0.050	**0.00711**	**0.0203**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10			< 0.050	< 0.0100	**0.0164**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.0808**			< 0.025	
		Apr-11	FD		< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.122**			< 0.025	
	MW-20	Apr-09			< 0.020	< 0.0100	< 0.0100	< 0.0012		< 0.00080		< 0.000042		**0.0157**	
		Oct-09			< 0.050										
		Apr-10			< 0.050	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.105**			< 0.025	
	MW-21	Apr-09			< 0.020	< 0.0100	< 0.0100	< 0.0012		< 0.00080		< 0.000042		**0.0261**	
		Oct-09			< 0.050										
		Apr-10			< 0.050	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		**0.0399**	
		Oct-10		< 0.0500	< 0.050	< 0.0100	< 0.0100	< 0.0100	< 0.400	< 0.0100	**0.790**			**0.0246 J**	
		Apr-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.342**		< 0.025	**0.0344**	**0.038**
		Sep-11		< 0.0500	< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	**0.698**			**0.0907**	
	MW-25	Apr-09			< 0.020	< 0.0100	**0.0103**	< 0.0100		< 0.00080				**0.0232**	
		Sep-09			< 0.050	< 0.00500	**0.0112**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10			< 0.050	< 0.0100	**0.0139**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Mar-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.113**			< 0.025	
	MW-26	Apr-09			< 0.020	< 0.0100	< 0.0100	< 0.0012		< 0.00080		< 0.000042		< 0.0100	
		Sep-09			< 0.050	< 0.00500	**0.00818**	< 0.00500		< 0.00500		< 0.000200		**0.00535**	
		Apr-10			**0.62**	< 0.0100	< 0.0100	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.0587**			< 0.025	
	MW-27	Apr-09			< 0.020	< 0.0100	**0.0149**	< 0.0012		< 0.00080		< 0.000042		**0.0118**	
		Sep-09			< 0.050	< 0.00500	**0.0156**	< 0.00500		< 0.00500		< 0.000200		**0.0135**	
		Apr-10			< 0.050	< 0.0100	**0.0158**	< 0.0100		< 0.0100		< 0.000200		**0.0116**	
		Apr-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
	MW-68	Apr-09			< 0.020	< 0.0100	**0.0122**	< 0.0012		< 0.00080		< 0.000042		**0.0163**	
		Sep-09			< 0.050	**0.00566**	**0.0156**	< 0.00500		< 0.00500		< 0.000200		**0.0379**	
		Apr-10			< 0.050	< 0.0100	**0.0127**	< 0.0100		< 0.0100		< 0.000200		**0.0127**	
		Apr-11			< 0.05	**< 0.05**	< 0.05	< 0.05	**< 2**	**< 0.05**	< 0.05			< 0.05	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
TMD (continued)	MW-71	Apr-10			< 0.050	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		**0.0311**	
		Oct-10			< 0.050	< 0.0100	< 0.0100	< 0.0100	< 0.400	< 0.0100	< 0.0100	< 0.000200	< 0.0100	**0.0330**	**0.0234**
		Apr-11			< 0.05	**< 0.05**	< 0.05	< 0.05	**< 2**	**< 0.05**	< 0.05	< 0.0002	< 0.05	< 0.05	< 0.05
		Apr-11	FD		< 0.05	**< 0.05**	< 0.05	< 0.05	**< 2**	**< 0.05**	< 0.05	< 0.0002	< 0.05	< 0.05	< 0.05
		Sep-11			< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250	< 0.000200	< 0.0250	**0.0473**	< 0.0250
	MW-89	Apr-09			**0.14**	**0.0197**	**0.0131**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09			**0.084**	**0.0101**	**0.0157**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10	FD	< 0.0500	< 0.050	**0.0149**	**0.0187**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-10			< 0.050	< 0.0100	**0.0133**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Apr-11			**0.19**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.947**			< 0.025	
	NP-1	Apr-09													
		Sep-09													
		Apr-10													
		Oct-10													
		Apr-11													
		Sep-11													
	NP-6	Apr-09			< 0.020	< 0.0100	**0.0101**	< 0.0012		< 0.00080				**0.0245**	
		Oct-09			< 0.050										
		Oct-10													
		Apr-11													
N Refinery	MW-23	Apr-09			**17**	**0.0212**	**15.3**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Sep-09			**3.7**	**0.0182**	**4.59**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Mar-10		**5.81**	**3.4**	**0.0152**	**6.82**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**38.3**	**5.1 J**	**< 0.0250**	**6.02**	< 0.0250	< 1.00	**< 0.0250**	**0.0840**			< 0.0250	
		Apr-11		**30.7**	**2.5**	**< 0.025**	**8.84**	< 0.025	< 1	**0.0292**	**0.0937**			< 0.025	
		Sep-11		**36.1**	**2.6**	**< 0.0250**	**11.8**	< 0.0250	< 1.00	**< 0.0250**	**0.0790**			< 0.0250	
	MW-29	Apr-09			**0.53**	**0.0274**	**0.0173**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09			**0.48**	**0.00720**	**0.0222**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Mar-10		**0.0784**	**0.22**	< 0.00500	**0.0168**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**0.0693**	**0.38**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.350**			< 0.0250	
		Apr-11		**0.0694**	**0.27 J**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.419**			< 0.025	
		Sep-11		< 0.0500	**0.16**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.450**			< 0.0250	
	MW-30	Mar-10		< 0.0500	**0.47**	**0.0126**	**0.0128**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
	MW-40	Mar-10		**0.974**	**1.2**	< 0.00500	**0.0259**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-11		**0.483**	**0.47 J**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.0813**			< 0.025	
		Apr-11	FD	**0.478**	**0.54 J**	**< 0.025**	**0.025**	< 0.025	< 1	**< 0.025**	**0.0762**			< 0.025	
	MW-41	Apr-09			**1.0**	**0.0181**	**0.0271**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Sep-09			**1.1**	**0.0138**	**0.0179**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Mar-10		**0.417**	**0.92**	**0.0105**	**0.0188**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**0.744**	**0.97**	**< 0.0250**	**0.0323**	< 0.0250	< 1.00	**< 0.0250**	**0.876**			< 0.0250	
		Apr-11		**0.157**	**0.79 J**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**1.06**			< 0.025	
		Sep-11		**0.167**	**0.46**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.778**			< 0.0250	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
N Refinery (continued)	MW-42	Apr-09			**2.6**	**0.0150**	**0.0268**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Apr-09	FD		**2.2**	**0.0154**	**0.0256**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Sep-09			**1.3**	**0.0136**	**0.0224**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Mar-10		**1.89**	**1.7**	**0.0122**	**0.0283**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**1.96**	**1.0**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.209**			< 0.0250	
		Apr-11		**2.64**	**0.94 J**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.246**			< 0.025	
	MW-43	Apr-09			**5.7**	**0.0126**	**0.903**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Sep-09			**2.0**	**0.0119**	**0.213**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Mar-10		**12.9**	**3.1**	**0.00998**	**0.489**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**15.7**	**1.2**	**< 0.0250**	**1.22**	< 0.0250	< 1.00	**< 0.0250**	**0.229**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Apr-11		**4.08**	**1.7**	**< 0.025**	**0.288**	< 0.025	< 1	**< 0.025**	**0.335**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11		**11.9**	**2.5**	**< 0.0250**	**1.61**	< 0.0250	< 1.00	**< 0.0250**	**0.241**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
	MW-45	Apr-09			**0.37**	< 0.0100	**0.0147**	< 0.0100		< 0.0100				**0.0112**	
		Sep-09			**0.33**	< 0.00500	**0.0146**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Mar-10			**0.29**	< 0.00500	**0.0137**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Nov-10			**0.38**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.390**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Nov-10	FD		**0.21**	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	**0.450**	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Apr-11			**0.16**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.488**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11			< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.392**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Sep-11	FD		< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.399**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
	MW-46	Nov-10			< 0.050	**< 0.0500**	**0.497**	**0.0593**	**39.4**	**< 0.0500**	**0.392**		< 0.0500	< 0.0500	**0.189**
	MW-46R	Apr-11			< 0.05 UJ	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.0842**			< 0.025	
		Sep-11			< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.0914**			< 0.0250	
	MW-55	Apr-09			< 0.050	< 0.0100	**0.0160**	< 0.0012		< 0.00080		< 0.000042		**0.0128**	
		Sep-09			**0.059**	**0.00525**	**0.00838**	< 0.00500	< 0.200	< 0.0100	**0.0573**	< 0.000200		**0.0184**	
		Mar-10		< 0.0500	< 0.050	< 0.00500	**0.00913**	< 0.00500		< 0.00500		< 0.000200		**0.0216**	
		Oct-10		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Apr-11		< 0.05	< 0.05 U	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.0328**	< 0.0002	< 0.025	**0.0273**	< 0.025
		Sep-11		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.0355**	< 0.000200	< 0.0250	**0.0269**	< 0.0250
	MW-56	Apr-09			< 0.020	< 0.0100	**0.0142**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09			**0.073**	**0.00685**	**0.0136**	< 0.00500	< 0.200	< 0.00500	**0.347**	< 0.000200		< 0.00500	
		Sep-09	FD		**0.067**	**0.00639**	**0.0135**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Mar-10			**0.23**	**0.00654**	**0.0122**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10			**0.089**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.304**			< 0.0250	
		Apr-11			< 0.05 UJ	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.347**			< 0.025	
		Apr-11	FD		< 0.05 UJ	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.341**		< 0.025	< 0.025	**0.0252**
		Sep-11			< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.282**			< 0.0250	
	MW-59	Apr-10		**0.0946**	< 0.050	**0.0316**	**0.0127**	< 0.00500		< 0.0100		< 0.000200		< 0.00500	
		Apr-11		**0.167**	< 0.05 UJ	**0.0796**	< 0.025	< 0.025	< 1	**< 0.025**	**0.456**			< 0.025	
	MW-60	Apr-10		**0.917**	**0.35**	**0.0180**	**0.0193**	< 0.00500		< 0.0100		< 0.000200		< 0.00500	
		Nov-10		**0.962**	**0.27**	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	**0.351**	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Apr-11		**0.843**	**0.11 J**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.41**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11		**1.46**	**0.21**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.258**	< 0.000200	< 0.0250	< 0.0250	< 0.0250

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
N Refinery (continued)	MW-61	Apr-09		**16.2**	**3.2**	< 0.0100	**0.0556**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Oct-09		**9.80**	**1.4**										
		Apr-10		**9.31**	**1.5**	< 0.0100	**0.0327**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**11.3**	**1.4**	**< 0.0250**	**0.0294**	< 0.0250	< 1.00	**< 0.0250**	**0.0264**			< 0.0250	
		Apr-11		**9.71**	**1.1**	**< 0.025**	**0.0261**	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
		Sep-11		**6.23**	**0.62**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.0280**			< 0.0250	
	MW-62	Apr-09		**10.2**	**7.0**	**0.0192**	**0.445**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Oct-09		**6.61**	**1.2**										
		Apr-10		**3.91**	**1.2**	< 0.0100	**0.876**	< 0.0100		< 0.0100		< 0.000200		< 0.0100	
		Oct-10		**4.44**	**0.65**	**< 0.0250**	**0.206 J**	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
		Oct-10	FD	**4.79**	**0.61**	< 0.00500	**0.217 J**	< 0.00500	< 0.200	< 0.00500	**0.00520**			< 0.00500	
		Apr-11		**3.94**	**1.1**	**< 0.025**	**0.514**	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
		Sep-11		**3.88**	**0.62**	**< 0.0250**	**0.417**	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
	MW-67	Apr-09			**2.7**	< 0.0100	**0.165**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Oct-09		**0.368**	**0.67**										
		Mar-10		**0.402**	**1.0**	< 0.00500	**0.154**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**1.22**	**1.3**	**< 0.0250**	**0.287**	< 0.0250	< 1.00	**< 0.0250**	**0.142**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
	MW-90	Apr-09		**0.440**	**1.9**	< 0.0100	**0.0218**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Oct-09		**0.244**	**2.0**										
		Mar-10		**0.274**	**1.9**	< 0.00500	**0.0164**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**0.269**	**1.7**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.0520**			< 0.0250	
		Apr-11		**0.245**	**1.2**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.0644**			< 0.025	
		Sep-11		**0.281**	**0.42**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.0736**			< 0.0250	
		Sep-11	FD	**0.150**	**1.0**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.0772**			< 0.0250	
	MW-91	Apr-09		**15.3**	**2.1**	< 0.0100	**0.0934**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Oct-09		**27.5**	**2.6**										
		Mar-10		**21.9**	**1.2**	< 0.00500	**0.0433**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**29.8**	**1.9**	**< 0.0250**	**0.0618**	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
		Apr-11		**16.3**	**1.7**	**< 0.025**	**0.0726**	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
		Sep-11		**12.8**	**0.78**	**< 0.0250**	**0.203**	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
	MW-92	Apr-09		**6.79**	**4.4**	< 0.0100	**0.313**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Oct-09		**9.45**	**4.9**										
		Mar-10		**5.26**	**3.6**	< 0.00500	**2.29**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
	MW-93	Apr-09		**10.4**	**1.2**	< 0.0100	**0.123**	**0.0413**		**0.0592**		< 0.000200		< 0.0050	
		Oct-09		**5.08**	**1.9**										
		Mar-10		**31.8 J**	**1.5 J**	**0.00832**	**0.0433 J**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Mar-10	FD	< 0.0500 UJ	**0.14 J**	**0.00826**	**0.0207**	< 0.00500		**0.00880**		< 0.000200		**0.00508**	
		Oct-10		**8.49**	**1.9**	**< 0.0250**	**0.0427**	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
		Apr-11		**7.01**	**1.6**	**< 0.025**	**0.0546**	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
		Sep-11		**8.62**	**0.61**	**< 0.0250**	**0.0502**	< 0.0250	< 1.00	**< 0.0250**	**0.0289**			< 0.0250	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
N Refinery (continued)	MW-95	Apr-09		**0.273**	**1.6**	< 0.0100	**0.0756**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Oct-09		**0.113**	**1.2**										
		Mar-10		**0.144**	**0.95**	< 0.00500	**0.0905**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-11		**0.124**	**1.1**	**< 0.025**	**0.0882**	< 0.025	< 1	**< 0.025**	**0.161**			< 0.025	
	MW-96	Apr-09		**37.3**	**2.4**	< 0.0100	**0.146**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Apr-09	FD	**37.3**	**1.5**	< 0.0100	**0.152**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Oct-09		**35.2**	**1.6**										
		Oct-09	FD	**38.0**	**1.8**										
		Mar-10		**25.8**	**1.6**	< 0.00500	**0.0675**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**31.2**	**1.7**	**< 0.0250**	**0.0854**	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
		Apr-11		**1.16**	**0.94**	**< 0.025**	**0.0668**	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
		Sep-11		**2.19**	**0.49**	**< 0.0250**	**0.0734**	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
	MW-98	Apr-09		**22.9**	**2.5**	< 0.0100	**0.0104**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**33.9**	**2.7**	< 0.00500	**0.0136**	< 0.00500		**0.00946**		< 0.000200		< 0.00500	
		Apr-10		**27.4**	**3.3**	< 0.0100	**0.0142**	< 0.0100		**0.0108**		< 0.000200		< 0.0100	
		Oct-10		**30.2**	**1.7**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
		Apr-11		**30.6**	**1.9 J**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
		Sep-11		**29.6**	**1.0**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
	RW-1	Apr-09				< 0.0100	**0.0517**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Oct-09													
		Nov-10			**5.6**	**< 0.0500**	**0.0634**	< 0.0500	**< 2.00**	**< 0.0500**	**0.172**		< 0.0500	< 0.0500	< 0.0500
	RW-2	Nov-10			**5.4**	**< 0.0250**	**3.10**	< 0.0250	< 1.00	**< 0.0250**	< 0.0250		< 0.0250	< 0.0250	< 0.0250
	RW-7	Apr-10		**0.320**	**1.0 J**	< 0.00500	**0.142**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
	RW-9	Apr-10		**0.926**	**0.44 J**	< 0.00500	**0.0614**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10	FD	**0.708**	**0.42 J**	< 0.00500	**0.0598**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-11													
		Apr-11		**2.78**	**0.77**	**< 0.025**	**0.0734**	< 0.025	< 1	**< 0.025**	**0.299**			< 0.025	
	RW-10	Apr-10		< 0.0500	**0.29**	< 0.00500	**0.0214**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-11		< 0.05	**0.27**	**< 0.025**	< 0.025	< 0.025	**4.14**	**< 0.025**	**0.206**			< 0.025	
		Apr-11	FD	< 0.05	**0.28**	**< 0.025**	< 0.025	< 0.025	**3.91**	**< 0.025**	**0.197**			< 0.025	
	RW-16A	Mar-10			**0.40**	**0.0157**	**0.0170**	< 0.00500		< 0.00500		< 0.000200		**0.0127**	
S Refinery	KWB-2R	Oct-10			**1.3**	**< 0.0500**	**0.733**	< 0.0500	**< 2.00**	**< 0.0500**	**0.167**			< 0.0500	
		Apr-11			**54**	**< 0.025**	**0.0517**	< 0.025	**2.35**	**0.045**	**1.02**			< 0.025	
	MW-28	Apr-09			**3.0**	< 0.0100	**0.0321**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09			**1.6**	< 0.00500	**0.0299**	< 0.00500		**0.00771**		< 0.000200		< 0.00500	
		Apr-10		**5.42**	**3.5**	**0.00684**	**0.0365**	< 0.00500		**0.0194**		< 0.000200		< 0.00500	
		Oct-10		**6.81 J**	**3.6 J**	**< 0.0250**	**0.0364**	< 0.0250	< 1.00	**< 0.0250**	**0.251**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Apr-11		**0.38**	**1.6**	**< 0.025**	**0.0538**	< 0.025	< 1	**< 0.025**	**0.366**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11		**0.239**	**2.0**	**< 0.0250**	**0.0527**	< 0.0250	< 1.00	**< 0.0250**	**0.291**	< 0.000200	< 0.0250	< 0.0250	< 0.0250

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
S Refinery (continued)	MW-49	Apr-09		**4.27**	**1.9**	< 0.0100	**0.0486**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Apr-10		**3.72**	**0.74**	< 0.00500	**0.0515**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**3.29**	**1.8**	**< 0.0250**	**0.0493**	< 0.0250	< 1.00	**< 0.0250**	**0.209**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Apr-11		**3.23**	**1 J**	**< 0.025**	**0.0558**	< 0.025	< 1	**< 0.025**	**0.241**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11		**3.03**	**0.83**	**< 0.0250**	**0.0415**	< 0.0250	< 1.00	**< 0.0250**	**0.218**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Sep-11	FD	**2.72**	**0.75**	**< 0.0250**	**0.0415**	< 0.0250	< 1.00	**< 0.0250**	**0.209**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
	MW-50	Apr-09			**0.36**	< 0.0100	**0.0208**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09			**0.12**	< 0.00500	**0.0205**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Sep-09	FD		**0.12**	< 0.00500	**0.0260**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10			**0.13**	< 0.0100	**0.0215**	< 0.0100		< 0.0100		< 0.000200		< 0.0100 UJ	
		Nov-10			**0.090**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**1.27**		< 0.0250	< 0.0250	< 0.0250
		Apr-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**1.39**			< 0.025	
		Sep-11			**0.078**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**1.19**			< 0.0250	
	MW-52	Apr-09			**0.084**	< 0.0100	**0.0106**	< 0.0012		< 0.00080				< 0.0050	
		Sep-09			**0.080**	**0.00568**	**0.0109**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Sep-09	FD		**0.11**	**0.00588**	**0.0110**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		< 0.0500	**0.057**	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		< 0.0500	< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	**0.0764**	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Apr-11		< 0.05	**0.075**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.0846**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11		**0.240 J**	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.0717**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Sep-11	FD	**0.105 J**	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.0685**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
	MW-57	Nov-10		< 0.0500	< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	**0.201**			**0.0542**	
		Apr-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.926**			< 0.025	
		Sep-11		< 0.0500	< 0.050	**0.00565**	**0.0202**	< 0.00500	< 0.200	< 0.00500	**0.103**			**0.0266**	
	MW-58	Apr-09			**0.68**	**0.0603**	**0.373**	< 0.0012		< 0.00080				< 0.0050	
		Sep-09			**0.73**	**0.0139**	**0.612**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10			**4.6**	**0.0423**	**1.27**	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-10	FD		**5.6**	**0.0275**	**1.10**	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10			**0.49**	**< 0.0500**	**3.19**	< 0.0500	**10.8**	**< 0.0500**	**0.364**	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Apr-11			**0.45**	**0.0843**	**0.371**	< 0.025	**2.19**	**< 0.025**	**0.942**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11			**0.46**	**0.104**	**0.318**	< 0.0250	**1.36**	**< 0.0250**	**0.898**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
	MW-66	Apr-09		**12.0**	**1.7**	< 0.0100	**1.45**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**12.5**	**0.59**	< 0.00500	**1.61**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**8.27**	**2.0**	< 0.00500	**1.78**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**23.0**	**0.96**	**< 0.0250**	**2.78**	< 0.0250	**2.50**	**< 0.0250**	**0.199**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Apr-11		**5.26**	**0.5**	**< 0.025**	**1.77**	< 0.025	< 1	**< 0.025**	**0.269**	< 0.0002	< 0.025	< 0.025	< 0.025
		Apr-11	FD	**5.27**	**0.53**	**< 0.025**	**1.73**	< 0.025	< 1	**< 0.025**	**0.278**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11		**3.76**	**0.37**	**< 0.0250**	**1.44**	< 0.0250	< 1.00	**< 0.0250**	**0.238**	< 0.000200	< 0.0250	< 0.0250	< 0.0250

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

				Analyte Group:	TPH	Total Metals									
				Analyte:	GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
				Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL:		0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
				CGWSL Source:		NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**													
S Refinery (continued)	MW-99	Apr-09		**2.04**	**0.70**	**0.0465**	**0.0811**	< 0.0012		< 0.0100		< 0.000042		< 0.0050	
		Sep-09		**29.2**	**0.59**	**0.0147**	**0.103**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**27.3**	**1.5**	**0.0138**	**0.239**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**22.6**	**0.83**	**< 0.0250**	**0.0800**	< 0.0250	< 1.00	**< 0.0250**	**0.288**			< 0.0250	
		Apr-11		**13.2**	**0.29**	**< 0.025**	**0.0838**	< 0.025	< 1	**< 0.025**	**0.275**			< 0.025	
		Sep-11		**19.1**	**0.34**	**< 0.0250**	**0.844**	< 0.0250	**1.10**	**< 0.0250**	**0.201**			< 0.0250	
	MW-101	Apr-09		**24.4**	**0.83**	**0.0145**	**0.194**	< 0.0012		< 0.00080		< 0.000042		< 0.0050	
		Sep-09		**0.736**	**0.81**	**0.0595**	**0.0651**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**1.99**	**0.82**	**0.0246**	**0.104**	< 0.00500		< 0.0100		< 0.000200		< 0.00500	
		Nov-10		**1.45**	**1.1**	**0.0323**	**0.0814**	< 0.0250	**1.56**	**< 0.0250**	**0.982**			< 0.0250	
		Apr-11		**3.26**	**0.83**	**< 0.025**	**0.0994**	< 0.025	**1.03**	**< 0.025**	**1.04**			< 0.025	
		Sep-11		**1.42**	< 0.050	**0.0600**	**0.0648**	< 0.0250	**3.22**	**< 0.0250**	**1.05**			< 0.0250	
	MW-103	Mar-09		**9.54**	**3.9**	< 0.00500	**0.494**	< 0.00500	< 0.200	< 0.00500	**0.0191**	< 0.000042	< 0.00500	< 0.0022	< 0.00500
		Sep-09		**5.15**	**1.6**	< 0.00500	**0.561**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**4.47**	**3.4**	< 0.00500	**0.614**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-11		**2.93**	**0.7**	**< 0.025**	**0.663**	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
	MW-104	Mar-09		**1.61**	**0.85**	< 0.00500	**0.0280**	< 0.00500	< 0.200	< 0.0012	**0.0177**	< 0.000042	< 0.00500	< 0.0022	< 0.0014
		Sep-09		**1.08**	**0.50**	**0.00597**	**0.0400**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**0.714**	**0.38**	< 0.00500	**0.0278**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		**0.784**	**0.56**	**< 0.0250**	**0.0286**	< 0.0250	< 1.00	**< 0.0250**	**0.0273**			< 0.0250	
		Oct-10	FD	**0.812 J**	**0.47 J**	**< 0.0250**	**0.0322**	< 0.0250	< 1.00	**< 0.0250**	**0.0283**			< 0.0250	
		Apr-11		**0.937**	**0.25**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.0285**			< 0.025	
		Sep-11		**0.994 J**	**0.32**	**< 0.0250**	**0.0260**	< 0.0250	< 1.00	**< 0.0250**	**0.0326**			< 0.0250	
		Sep-11	FD	**1.09**	**0.48**	**< 0.0250**	**0.0250**	< 0.0250	< 1.00	**< 0.0250**	**0.0348**			< 0.0250	
	MW-106	Sep-09		**37.8**	**3.2**	**0.0112**	**0.0341**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10		**22.7**	**0.81 J**	< 0.00500	**0.0180**	< 0.00500		**0.00593**		< 0.000200		< 0.00500	
		Oct-10		**40.1**	**2.0**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
		Apr-11		**25.8**	**2.1**	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025			< 0.025	
		Sep-11		**23.9**	**1.1**	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250			< 0.0250	
	MW-107	Sep-09		**44.3**	**2.8**	**0.00555**	**1.45**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Mar-10		**28.7**	**3.1**	**0.00857**	**1.98**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Nov-10		**34.2**	**1.8**	**< 0.0250**	**2.46**	< 0.0250	**10.8**	**< 0.0250**	**0.196**			< 0.0250	
		Apr-11		**21.9**	**2**	**< 0.025**	**2.11**	< 0.025	**7.92**	**< 0.025**	**0.25**			< 0.025	
		Sep-11		**19.9**	**2.1 J**	**< 0.0250**	**1.63**	< 0.0250	**6.06**	**< 0.0250**	**0.416**			< 0.0250	
	MW-109	Jan-11		**7.69**	**1.4**	**0.016**	**0.154 J**	**0.00356 J**		**0.00128 J**		< 0.0002		< 0.005	
		Jan-11	FD	**5.44**	**1**	**0.0206**	**0.247 J**	**0.00794**		**0.00289 J**		< 0.0002		< 0.005	
		Apr-11		**5.23**	**2.2**	**0.0309**	**0.103**	< 0.025	**2.1**	**< 0.025**	**0.776**			< 0.025	
		Sep-11		**1.64**	**0.18**	**0.0256**	**0.140**	< 0.0250	**1.08**	**< 0.0250**	**0.457**			< 0.0250	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
S Refinery (continued)	MW-110	Jan-11		**10.2**	**2.4**	**0.0119**	**0.166**	< 0.005		< 0.005		< 0.0002		< 0.005	
		Apr-11		**5.9**	**4.9**	**< 0.025**	**0.201**	< 0.025	**3.65**	**< 0.025**	**2.33**			< 0.025	
		Sep-11		**1.13**	**0.18**	**0.0315**	**0.0830**	< 0.0250	**1.33**	**< 0.0250**	**2.51**			< 0.0250	
	RW-4	Apr-10			**1.0**	**0.0283**	**0.193**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-11			**1.3**	**< 0.025**	**0.194**	< 0.025	< 1	**< 0.025**	**0.169**			< 0.025	
	RA-313	Oct-09													
		Apr-10													
		Apr-10	FD												
		Apr-11													
	RA-1227	Nov-10													
		Nov-10	FD												
		Apr-11													
Field E of Refinery	KWB-1A	Apr-09			< 0.020	< 0.0100	< 0.0100	< 0.0012		< 0.00080				< 0.0050	
		Sep-09			< 0.050	**0.00709**	**0.00975**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10			< 0.050	**< 0.0250**	**0.0101**	< 0.0250		< 0.0100		< 0.000200		< 0.0250	
		Oct-10			< 0.050	< 0.00500	**0.00887**	< 0.00500	< 0.200	< 0.00500	**0.234**	< 0.000200	**0.0114**	< 0.00500	**0.0166**
		Oct-10	FD		< 0.050	< 0.00500	**0.00979**	< 0.00500	< 0.200	< 0.00500	**0.251**	< 0.000200	**0.0110**	< 0.00500	**0.0181**
		Apr-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.275**	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11			< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	**0.251**	< 0.000200	< 0.0250	< 0.0250	< 0.0250
	KWB-3AR	Apr-09			< 0.020	< 0.0100	**0.0242**	< 0.0100		< 0.0100		< 0.000042		**0.0146**	
		Apr-10			< 0.050	**< 0.0250**	**0.0236**	< 0.0250		**< 0.0250**		< 0.000200		**0.0282**	
		Oct-10			< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	< 0.0500	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Oct-10	FD		< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	< 0.0500	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Apr-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025	< 0.0002	< 0.025	**0.0272**	< 0.025
	KWB-7	Apr-09			< 0.050	< 0.0100	**0.0343**	< 0.0012		< 0.00080				**0.0135**	
		Oct-09			< 0.050										
		Apr-10			< 0.050	**< 0.0250**	**0.0302**	< 0.0250		< 0.0100		< 0.000200		< 0.0250	
		Oct-10			< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	**2.34**	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Apr-11			**0.052**	**< 0.05**	< 0.05	< 0.05	**< 2**	**< 0.05**	**1.54**	< 0.0002	< 0.05	< 0.05	< 0.05
		Sep-11			< 0.050	**< 0.0250**	**0.0395**	< 0.0250	< 1.00	**< 0.0250**	**2.19**	< 0.000200	**0.0274**	< 0.0250	< 0.0250
	KWB-9	Apr-09			< 0.020	< 0.0100	**0.0109**	< 0.0012		< 0.0100				< 0.0050	
		Sep-09			< 0.050	< 0.00500	**0.0113**	< 0.00500		< 0.00500		< 0.000200		**0.00640**	
		Apr-10			< 0.050	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10			< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	< 0.0500	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Apr-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	**0.0282**	< 0.0002	< 0.025	< 0.025	< 0.025
	KWB-11A	Apr-09			< 0.020	< 0.0100	**0.0215**	< 0.0100		< 0.00080				**0.0255**	
		Oct-09			< 0.050										
		Apr-10			< 0.050	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		< 0.0500	< 0.050	< 0.00500	**0.0203**	< 0.00500	< 0.200	< 0.0100	< 0.00500	< 0.000200	**0.00707**	**0.00897**	**0.0128**
		Apr-11		< 0.05	< 0.05 UJ	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Sep-11	FD	< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250	< 0.000200	< 0.0250	< 0.0250	< 0.0250

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
Field E of Refinery (continued)	KWB-11B	Oct-10		< 0.0500	< 0.050	< 0.00500	**0.0172**	< 0.00500	< 0.200	< 0.00500	< 0.00500	< 0.000200	**0.00639**	**0.00981**	**0.00751**
		Apr-11		< 0.05	< 0.05 UJ	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025	< 0.0002	< 0.025	**0.0323**	< 0.025
		Sep-11		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250	< 0.000200	< 0.0250	< 0.0250	< 0.0250
	KWB-12A	Sep-09			< 0.050	< 0.00500	**0.0173**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Oct-10		< 0.0500	< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	< 0.0500	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Sep-11		< 0.0500	< 0.050	< 0.00500	**0.0140**	< 0.00500	< 0.200	< 0.00500	< 0.00500	< 0.000200	< 0.00500	< 0.00500	**0.0101**
	KWB-12B	Oct-10		< 0.0500	< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	< 0.0500	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Apr-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025	< 0.0002	< 0.025	< 0.025	< 0.025
		Sep-11		< 0.0500	< 0.050	< 0.00500	**0.00821**	< 0.00500	< 0.200	< 0.00500	< 0.00500	< 0.000200	< 0.00500	< 0.00500	**0.0108**
		Sep-11	FD	< 0.0500	< 0.050	< 0.00500	**0.00809**	< 0.00500	< 0.200	< 0.00500	< 0.00500	< 0.000200	< 0.00500	< 0.00500	**0.0111**
	RW-11-1	Nov-10			**3.5**	**< 0.0250**	**0.106**	< 0.0250	**9.62**	**< 0.0250**	**0.812**		< 0.0250	< 0.0250	< 0.0250
	RW-18	Apr-09				< 0.0100	**0.0108**	< 0.0012		< 0.00080				**0.0115**	
		Sep-09				**0.00602**	**0.0109**	< 0.00500		< 0.00500		< 0.000200		**0.00894**	
		Apr-10				**< 0.0250**	**0.0102**	< 0.0250		< 0.0100		< 0.000200		< 0.0250	
	RA-4196	Apr-09										< 0.000042			
		Sep-09				< 0.00500	**0.0138**	< 0.00500		< 0.00500		< 0.000200		< 0.00500	
		Apr-10													
		Nov-10													
		Apr-11													
		Apr-11	FD												
		Sep-11													
		Sep-11	FD												
	RA-4798	Apr-09										< 0.000042			
		Sep-09				< 0.00500	**0.0109**	< 0.00500		< 0.00500		< 0.000200		**0.00815**	
		Apr-10													
		Nov-10													
		Apr-11													
		Sep-11													
Crossgradient	KWB-13	Apr-09			< 0.020	< 0.0100	**0.0186**	< 0.0100		< 0.0100		< 0.000042		**0.0181**	
		Apr-09	FD		< 0.020	< 0.0100	**0.0202**	< 0.0100		< 0.0100		< 0.000042		**0.0203**	
		Sep-09			< 0.050	< 0.00500	**0.0183**	< 0.00500		< 0.00500		< 0.000200		**0.0169**	
		Apr-10			< 0.050	**< 0.0250**	**0.0290**	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-11			< 0.05	**< 0.025**	**0.0297**	< 0.025	< 1	**< 0.025**	< 0.025	< 0.0002	< 0.025	< 0.025	< 0.025
	NP-5	Apr-09			< 0.020	< 0.0100	< 0.0100	< 0.0012		< 0.0100				**0.0435**	
		Oct-09			< 0.050										
		Apr-10			< 0.050	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		**0.0412**	
		Apr-11			< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025			**0.0258**	
	RA-3156	Apr-09										< 0.000042			
		Apr-10													
		Nov-10													
		Apr-11													
		Sep-11													

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		TPH		Total Metals									
		Analyte:		GRO	DRO	Arsenic	Barium	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		CGWSL:			0.2	0.01	1	0.05	1	0.015	0.2	0.002	0.2	0.05	0.183
		CGWSL Source:			NMED TPH	EPA MCL	WQCC HH	WQCC HH	WQCC Dom	EPA MCL	WQCC Dom	EPA MCL	WQCC Irr	EPA MCL	NMED TW
Area	**Location**	**Date**	**Dup**												
Upgradient	MW-53	Apr-09			< 0.020	< 0.0100	**0.0347**	< 0.0012		< 0.00080				< 0.0050	
		Oct-09			< 0.050										
		Apr-10			< 0.050	**< 0.0250**	**0.0280**	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-10	FD		< 0.050	**< 0.0250**	**0.0261**	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Apr-11			**0.24**	**< 0.025**	**0.0311**	< 0.025	< 1	**< 0.025**	**1.59**			< 0.025	
	UG-1	Apr-09				< 0.0100	**0.473**	**0.0315**		**0.0404**		< 0.000042		**0.0126**	
		Oct-09													
		Apr-10		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		< 0.0500	< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	< 0.0500	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Mar-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025	< 0.0002	< 0.025	< 0.025	< 0.025
	UG-2	Apr-09				< 0.0100	**0.115**	< 0.0100		< 0.0100		< 0.000042		< 0.0050	
		Oct-09													
		Apr-10		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		< 0.0500	< 0.050	**< 0.0500**	< 0.0500	< 0.0500	**< 2.00**	**< 0.0500**	< 0.0500	< 0.000200	< 0.0500	< 0.0500	< 0.0500
		Mar-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025	< 0.0002	< 0.025	< 0.025	< 0.025
	UG-3R	Apr-09				< 0.0100	**0.0613**	< 0.0100		< 0.0100		**0.000309**		< 0.0050	
		Oct-09													
		Apr-10		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250		**< 0.0250**		< 0.000200		< 0.0250	
		Oct-10		< 0.0500	< 0.050	**< 0.0250**	< 0.0250	< 0.0250	< 1.00	**< 0.0250**	< 0.0250	< 0.000200	< 0.0250	< 0.0250	< 0.0250
		Mar-11		< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025	< 0.0002	< 0.025	< 0.025	< 0.025
		Mar-11	FD	< 0.05	< 0.05	**< 0.025**	< 0.025	< 0.025	< 1	**< 0.025**	< 0.025	< 0.0002	< 0.025	< 0.025	< 0.025

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

				Analyte Group:	Volatile Organic Compounds											
				Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
				Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
				CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**													
NCL	MW-18	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-54A	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-09	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-54B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-108	Oct-09		**75**	**480**	< 5.0	< 5.0	**96**	< 5.0	**98**	< 5.0 J	< 5.0	**11**	**110**	< 5.0
		Mar-10		**34**	**330**	< 5.0	< 5.0	**24**	< 5.0	< 5.0	**6.9**	< 5.0	< 5.0	**29**	< 5.0
		Apr-10		**41**	**400**	< 5.0	< 5.0	**11**	< 5.0	**27**	< 5.0	< 5.0 UJ	**7.6**	**58**	< 5.0
		Oct-10		**38**	**460**	< 5.0	< 5.0	**7.9**	< 5.0	< 5.0	**5.6**	< 5.0	**6.9**	**51**	< 5.0
		Apr-11		**41**	**530**	< 5	< 5	**5.2**	< 5	**5.8**	< 5	< 5	**7.7**	**53**	< 5
		Apr-11	FD	**39**	**470**	< 5	< 5	**5.1**	< 5	**6.1**	< 5	< 5	**7.4**	**49**	< 5
		Sep-11		**27**	**300**	< 5.0	< 5.0	< 5.0	< 5.0	**7.9**	< 5.0	< 5.0	**5.7**	**37**	< 5.0
	NCL-31	Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**8.5**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**8.7 J**	< 5.0 UJ	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	**5.4**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	NCL-32	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	NCL-33	Apr-09		< 0.50	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0 J	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	NCL-34	Apr-09		**120**	**2500**	< 0.50	< 0.50	**170**	< 0.50	**25**	< 0.50	< 0.60	< 5.0	**260**	< 0.50
		Sep-09		**96**	**1800**	< 5.0	< 5.0	**11**	< 5.0	**7.1**	< 5.0	< 5.0	< 5.0	**220**	< 5.0
		Mar-10		**37**	**340**	< 5.0	< 5.0	**5.6 J**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**65 J**	< 5.0
		Mar-10	FD	**37**	**330**	< 5.0	< 5.0	**23 J**	< 5.0	< 5.0	**6.0**	< 5.0	< 5.0	**25 J**	< 5.0
		Oct-10		**76**	**1600**	< 5.0	< 5.0	**12**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**150**	< 5.0
		Oct-10	FD	**76**	**1400**	< 5.0	< 5.0	**11**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**150**	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
NCL (continued)	NCL-44	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0 J	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	NCL-49	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Apr-09	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	RW-17A	Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
TEL	TEL-1	Apr-09		< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	**7.0**	< 5.0 J	**6.5**	< 0.60	< 5.0	< 15	< 0.50
		Apr-09	FD	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	**7.2**	< 5.0 J	**6.2**	< 0.60	< 5.0	< 15	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**7.3**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**5.3**	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	**6.2**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	TEL-2	Apr-09		**150**	**1200**	< 0.50	< 0.50	**12**	**17**	**27**	**12**	< 0.60	**43**	**200**	< 0.50
		Sep-09		**160**	**1100**	< 5.0	< 5.0	**9.4**	**17**	**28**	**13**	< 5.0	**56**	**240**	< 5.0
		Apr-10		**180**	**1500**	< 5.0	< 5.0	**15**	**7.5**	**52**	**18**	< 5.0	**75**	**250**	< 5.0
		Oct-10		**46**	**910**	< 25	< 25	< 25	< 25	< 25	< 25	**< 25**	**26**	**160**	**< 25**
		Apr-11		**140**	**1200**	< 5	< 5	**12**	**10**	**23**	**15**	< 5	**39**	**220**	< 5
		Sep-11		**160**	**1100**	< 5.0	< 5.0	**8.9**	**8.4**	**14**	**12**	< 5.0	**27**	**210**	< 5.0
	TEL-3	Apr-09		**48**	**540**	< 0.50	< 0.50	< 5.0	**41**	< 5.0 J	< 5.0	< 0.60	**6.0**	**30**	< 0.50
		Sep-09		**37**	**44**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		**25**	**35**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10	FD	**28**	**41**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		**5.3**	**30**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		**22**	**29**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**19**	< 5
		Sep-11		**20**	**33**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	TEL-4	Apr-09		< 0.50	**38**	< 0.50	< 0.50	**24**	**210**	< 5.0	< 5.0	< 0.60	< 5.0	**42**	< 0.50
		Sep-09		**91**	**12**	< 5.0	< 5.0	**13**	**200**	< 5.0	< 5.0	< 5.0	< 5.0	**28**	< 5.0
		Apr-10		**93**	**7.2**	< 5.0	< 5.0	**7.6**	**180**	< 5.0	< 5.0	< 5.0	< 5.0	**30**	< 5.0
		Oct-10		**51**	**10**	< 5.0	< 5.0	< 5.0	**160**	< 5.0	< 5.0	< 5.0	< 5.0	**20**	< 5.0
		Apr-11		**45**	**27**	< 5	< 5	< 5	**200**	< 5	< 5	< 5	< 5	**19**	< 5
		Sep-11		**82**	**150**	< 5.0	< 5.0	< 5.0	**150**	< 5.0	< 5.0	< 5.0	< 5.0	**48**	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Volatile Organic Compounds											
		Analyte:		1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:		15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:		EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**												
EP	MW-1R	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-2A	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	**7.1**	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-2B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-3	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-4A	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 5.0	< 0.60	< 5.0	< 15	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**16**	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10													
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-4B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-5A	Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**6.2**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-09	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**5.9**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		**7.3**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-5B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-6A	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	**5.0**	< 0.60	< 5.0	< 15	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**5.2**	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

				Analyte Group:	Volatile Organic Compounds											
				Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
				Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
				CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**													
EP (continued)	MW-6B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-7A	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-7B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-10	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Jun-10													
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-11	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-11A	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-11B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-15	Apr-09		< 5.0	**9.1**	< 0.50	< 0.50	**14**	< 0.50	< 0.50	< 5.0	< 0.60	< 5.0	< 15	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	**8.4**	< 5.0	< 5.0	**5.1**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	**20**	< 5	< 5	**8.6**	< 5	< 5	< 5	< 5	**7.9**	**19**	< 5
	MW-18A	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Jun-10													
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-18B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Volatile Organic Compounds											
		Analyte:		1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:		15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:		EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**												
EP (continued)	MW-22A	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	**5.5**	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**7.9**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**6.5**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**5.9**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**8.2**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	**7.4**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**7.7**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-22B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**9.1**		< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-70	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Jun-10													
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-72	Mar-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-73	Mar-09		< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	**5.5**	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-74	Mar-09		< 5.0	< 0.50	< 0.50	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-75	Mar-09		< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	**5.8**	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**9.3**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-09	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**10**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**7.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	**5.4**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
EP (continued)	MW-76	Mar-09		< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	**5.9**	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**11**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**6.3**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**6.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-77	Mar-09		< 5.0	**12**	< 0.50	< 0.50	< 5.0	**12**	< 0.50	< 0.50	< 0.60	< 0.50	< 15	< 0.50
		Sep-09		< 5.0	**32**	< 5.0	< 5.0	< 5.0	**10**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	**20**	< 5.0	< 5.0	< 5.0	**9.7**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	**11**	< 5.0	< 5.0	< 5.0	**9.8**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	**7.3**	< 5	< 5	< 5	< 5	< 15	< 5
		Mar-11	FD	< 5	< 5	< 5	< 5	< 5	**7.1**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	**24**	< 5.0	< 5.0	< 5.0	**15**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-78	Mar-09		< 5.0	**6.7**	< 0.50	< 0.50	< 5.0	< 5.0	< 0.50	< 5.0	< 0.60	< 5.0	< 15	< 0.50
		Sep-09		**5.0**	**13**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Jun-10													
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-79	Mar-09	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Mar-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-80	Mar-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-81	Mar-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-82	Mar-09		< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
EP (continued)	MW-83	Mar-09		**6.2**	**5.5**	< 0.50	< 0.50	**6.3**	< 5.0	< 0.50	< 5.0	< 0.60	< 5.0	**44**	< 0.50
		Sep-09		< 5.0	**5.3**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Jun-10													
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		**5.2**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-84	Mar-09		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 1.2	< 1.0	< 2.0	< 1.0
		Sep-09		< 10	**< 10**	< 10	< 10	< 10	**12**	< 10	< 10	**< 10**	< 10	< 30	**< 10**
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**7.1**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	**7.7**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**8.6**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-87	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-88	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Apr-09	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-09	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Apr-11	FD	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	OCD-1R	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	OCD-2A	Mar-09	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Mar-11	FD	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
EP (continued)	OCD-2B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		< 5.0	< 5.0	< 5.0	< 15	< 5.0
	OCD-3	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	OCD-4	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	OCD-5	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	OCD-6	Apr-09		< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 UJ	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	OCD-7A	Apr-09		< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-09	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**5.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 UJ	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	OCD-7B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	OCD-8A	Apr-09		< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	**9.0**	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**8.4**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**6.5**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**7.9**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	**7.1**	< 5	< 5	< 5	< 5	< 15	< 5
		Apr-11	FD	< 5	< 5	< 5	< 5	< 5	**7.5**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**6.4**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
EP (continued)	OCD-8B	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
TMD	MW-8	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**5.6**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**5.7**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-16	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Apr-09	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Apr-11	FD	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-20	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-21	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	**12**	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**8.3**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**6.2**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-25	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-26	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-27	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-68	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
TMD (continued)	MW-71	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Apr-11	FD	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-89	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.60	< 5.0	< 15	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	NP-1	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	**150**	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**130**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**150**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**100**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	**160**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**82**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	NP-6	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
N Refinery	MW-23	Apr-09		**580**	**15000**	< 0.50	< 0.50	**1900**	**27**	**370**	< 120	< 0.60	**600**	**1700**	< 0.50
		Sep-09		**110**	**7700**	< 5.0	< 5.0	**140**	**7.0**	**99**	< 5.0	< 5.0	**5.2**	**310**	< 5.0
		Mar-10		**150**	**15000**	< 5.0	< 5.0	**1100**	**8.1**	**200**	< 120	< 5.0	**9.7**	**500**	< 5.0
		Oct-10		**190**	**14000**	< 5.0	< 5.0	**1200**	**8.0**	**190**	< 5.0	< 5.0	**9.4**	**< 1500**	< 5.0
		Apr-11		**120**	**11000**	< 25	< 25	**950**	< 25	**160**	< 25	**< 25**	< 25	**400**	**< 25**
		Sep-11		**65**	**17000**	< 50	< 50	**520**	< 50	**180**	< 50	**< 50**	< 50	**280**	**< 50**
	MW-29	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-30	Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-40	Mar-10		< 5.0	**55**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Apr-11	FD	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-41	Apr-09		< 5.0	**23**	< 0.50	< 0.50	< 0.50	**60**	< 0.50	< 0.50	< 0.60	< 0.50	< 15	< 0.50
		Sep-09		< 5.0	**35**	< 5.0	< 5.0	< 5.0	**24**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	**75**	< 5.0	< 5.0	< 5.0	**10**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	**210**	< 5.0	< 5.0	< 5.0	**39**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	**13**	< 5	< 5	< 5	**29**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	**49**	< 5.0	< 5.0	< 5.0	**12**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Volatile Organic Compounds											
		Analyte:		1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:		15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:		EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**												
N Refinery (continued)	MW-42	Apr-09		**250**	**1600**	< 0.50	< 0.50	**27**	**28**	**40**	< 12	< 0.60	**5.7**	**420**	< 0.50
		Apr-09	FD	**270**	**1700**	< 0.50	< 0.50	**26**	**24**	**41**	< 12	< 0.60	**5.6**	**450**	< 0.50
		Sep-09		**56**	**560**	< 5.0	< 5.0	< 5.0	**31**	< 5.0 J	< 5.0	< 5.0	< 5.0	**98**	< 5.0
		Mar-10		**54**	**660**	< 5.0	< 5.0	< 5.0	**27**	< 5.0	< 5.0	< 5.0	< 5.0	**120**	< 5.0
		Oct-10		**37**	**610**	< 5.0	< 5.0	< 5.0	**26**	< 5.0	< 5.0	< 5.0	< 5.0	**80**	< 5.0
		Apr-11		**80**	**770**	< 5	< 5	< 5	**34**	**7**	< 5	< 5	< 5	**130**	< 5
	MW-43	Apr-09		**200**	**4900**	< 0.50	< 0.50	**510**	< 0.50	**84**	< 120	< 0.60	**140**	**720**	< 0.50
		Sep-09		**81**	**810**	< 5.0	< 5.0	**24**	**8.7**	< 5.0 J	**25**	< 5.0	**50**	**220**	< 5.0
		Mar-10		**120**	**4700 J**	< 5.0	< 5.0	**200**	**6.1**	**35**	< 120	< 5.0 UJ	**120**	**460**	< 5.0
		Oct-10		**89**	**5800**	< 50	< 50	**59**	< 50	**< 50**	< 50	**< 50**	**99**	**460**	**< 50**
		Apr-11		**56**	**890**	< 5	< 5	**13**	< 5	< 5	**19**	< 5	**41**	**190**	< 5
		Sep-11		**68**	**4400**	< 5.0	< 5.0	**83**	**8.1**	**14**	**27**	< 5.0	**130**	**340**	< 5.0
	MW-45	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 5.0	< 0.60	< 0.50	< 15	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Nov-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Nov-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-11	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-46	Nov-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-46R	Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-55	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-56	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-09	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Apr-11	FD	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-59	Apr-10		< 5.0	**8.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	**28**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-60	Apr-10		**5.0**	**170**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Nov-10		**9.8**	**220**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**20**	< 5.0
		Apr-11		< 5	**160**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**22**	< 5
		Sep-11		**8.5**	**280**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**5.1**	**33**	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Volatile Organic Compounds											
		Analyte:		1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:		15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:		EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**												
N Refinery (continued)	MW-61	Apr-09		320	3600	< 0.50	< 0.50	79	< 0.50	170	< 12	< 0.60	210	820	< 0.50
		Oct-09		180	2400	6.0	< 5.0	46	< 5.0	130	< 120	< 5.0	150	460	< 5.0
		Apr-10		200	2200	290	< 5.0	64	< 5.0	150	< 120	< 5.0	150	550	< 5.0
		Oct-10		230	2000	200	< 5.0	85	< 5.0	160	< 120	< 5.0	140	560	< 5.0
		Apr-11		290	1900	280	< 5	83	< 5	180	< 50	< 5	140	570	< 5
		Sep-11		190	1100	190	< 5.0	52	< 5.0	150	< 5.0	< 5.0	62	350	< 5.0
	MW-62	Apr-09		140	3500	< 0.50	< 0.50	44	17	65	< 5.0	< 0.60	< 5.0	320	< 0.50
		Oct-09		80	2900	< 5.0	< 5.0	32	19	32	< 5.0	< 5.0	< 5.0	240	< 5.0
		Apr-10		52	1500 J	< 5.0	< 5.0	39	36	14	< 5.0	< 5.0	< 5.0	170	< 5.0
		Oct-10		14 J	560 J	< 5.0	< 5.0	34	23	23	< 5.0	< 5.0	< 5.0	260	< 5.0
		Oct-10	FD	85 J	1400 J	< 5.0	< 5.0	33	21	25	< 5.0	< 5.0	< 5.0	250	< 5.0
		Apr-11		67	1000	< 5	< 5	18	26	13	< 5	< 5	< 5	180	< 5
		Sep-11		170	730	< 5.0	< 5.0	98	22	51	< 5.0	< 5.0	< 5.0	330	< 5.0
	MW-67	Apr-09		< 0.50	78	< 0.50	< 5.0 J	< 5.0	150	< 5.0 J	< 0.50	< 5.0	< 0.50	< 15	17
		Oct-09		< 5.0	45	< 5.0	< 5.0 J	< 5.0	110	< 5.0	< 5.0	< 5.0	< 5.0	< 15	5.0
		Mar-10		< 5.0	86	< 5.0	< 5.0	< 5.0	86	< 5.0	< 5.0	< 5.0	< 5.0	< 15	6.3
		Oct-10		< 5.0	160	< 5.0	< 5.0	< 5.0	580	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-90	Apr-09		< 0.50	20	< 0.50	< 0.50	< 5.0	< 0.50	< 5.0	< 5.0	< 0.60	< 5.0	< 1.0	< 0.50
		Oct-09		< 5.0	14	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	11	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	14	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	6.4	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	5.9	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-11	FD	< 5.0	6.2	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-91	Apr-09		140	1900	< 0.50	< 0.50	1100	< 0.50	43	190	< 0.60	2200	1100	< 0.50
		Oct-09		150	3900	< 5.0	< 5.0	1500	< 5.0	57	380	< 5.0	4800	1800	< 5.0
		Mar-10		170	3500	< 5.0	< 5.0	1500	< 5.0	47	310	< 5.0	3900	1900	< 5.0
		Oct-10		140	4800	< 5.0	< 5.0	1900	< 5.0	58	440	< 5.0	6000	2400	< 5.0
		Apr-11		170	2800	< 5	< 5	1200	< 5	55	< 120	< 5	250	1300	< 5
		Sep-11		130	2500	< 5.0	< 5.0	780	< 5.0	44	< 120	< 5.0	620	790	< 5.0
	MW-92	Apr-09		6.6	1800	< 0.50	28	220	68	90	6.2	7.9	16	57	20
		Oct-09		< 5.0	3600	< 5.0	94	260	260	110	5.3	< 5.0	18	40	< 5.0
		Mar-10		< 5.0	2200	< 5.0	60	160	130	34	< 5.0	< 5.0	13	34	< 5.0
	MW-93	Apr-09		300	2700	< 0.50	< 0.50	40	< 5.0 J	110	< 12	< 0.60	12	790	< 5.0
		Oct-09		190	1300	< 5.0	< 5.0	13	< 5.0	64	< 120	< 5.0	5.3	380 J	< 5.0
		Mar-10		180	1500 J	< 5.0	< 5.0	20 J	< 5.0	71 J	< 100	< 5.0	7.1	480	< 5.0
		Mar-10	FD	< 5.0	< 5.0 UJ	< 5.0	< 5.0	< 5.0 UJ	< 5.0	< 5.0 UJ	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		320	2700	< 5.0	< 5.0	42	< 5.0	100	< 120	< 5.0	11	870	< 5.0
		Apr-11		220	1800	< 5	< 5	40	< 5	89	< 50	< 5	10	560	< 5
		Sep-11		240	2500	< 5.0	< 5.0	58	< 5.0	120	< 50	< 5.0	15	550	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
N Refinery (continued)	MW-95	Apr-09		< 5.0	**23**	< 0.50	< 0.50	< 5.0	< 0.50	< 5.0 J	< 0.50	< 0.60	< 5.0	< 15	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-10		< 5.0	**16**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	MW-96	Apr-09		< 5.0	**6.8**	< 0.50	< 0.50	**6.1**	**63000**	< 5.0	< 5.0	< 0.60	< 5.0	**24**	< 0.50
		Apr-09	FD	< 5.0	**8.3**	< 0.50	< 0.50	**5.9**	**64000**	< 5.0	< 5.0	< 0.60	< 5.0	**22**	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**53000**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		Oct-09	FD	< 5.0	**5.1**	< 5.0	< 5.0	< 5.0	**53000**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**33000**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**30000**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	**26000**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		**< 120**	**< 120**	**< 120**	**< 120**	< 120	**41000**	**< 120**	< 120	**< 120**	< 120	< 380	**< 120**
	MW-98	Apr-09		**160**	**7100**	< 0.50	< 0.50	**590**	< 0.50	**93**	< 120	< 0.60	**180**	**700**	< 0.50
		Sep-09		**320**	**7700**	< 5.0	< 5.0	**1200**	< 5.0	**170**	**< 250 J**	< 5.0	**210**	**1300**	< 5.0
		Apr-10		**320**	**9500**	< 5.0	< 5.0	**1300**	< 5.0	**140**	**< 250**	< 5.0	**230**	**1600**	< 5.0
		Oct-10		**140**	**7600**	< 25	< 25	**770**	< 25	**160**	< 25	**< 25**	**190**	**1300**	**< 25**
		Apr-11		**580**	**12000**	< 5	< 5	**1600**	< 5	**300**	**52**	< 5	**370**	**2400**	< 5
		Sep-11		**400**	**7900**	< 50	< 50	**1200**	< 50	**230**	< 50	**< 50**	**260**	**1700**	**< 50**
	RW-1	Apr-09		**130**	**990**	< 0.50	**110**	**110**	**39**	**28**	**23**	**42**	**21**	**170**	**760**
		Oct-09		**590**	**1900**	< 5.0	**360**	**430**	**46**	**340**	**280**	**140**	**310**	**670**	**660**
		Nov-10		**35**	**950**	< 5.0	**3300**	**210**	**29**	**140**	**61**	**48**	**49**	**230**	**700**
	RW-2	Nov-10		**81**	**11000**	< 5.0	**460**	**1200**	**43**	**320**	**140**	**37**	**130**	**770**	**17**
	RW-7	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 UJ	< 15	< 5.0
	RW-9	Apr-10		< 5.0	**230**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 UJ	< 15	< 5.0
		Apr-10	FD	< 5.0	**240**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 UJ	< 15	< 5.0
		Apr-11													
		Apr-11		< 5	**630**	< 5	< 5	< 5	**5.4**	< 5	< 5	< 5	< 5	< 15	< 5
	RW-10	Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Apr-11	FD	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	RW-16A	Mar-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 UJ	< 5.0 UJ	< 15	< 5.0
S Refinery	KWB-2R	Oct-10		**510**	**5200**	< 5.0	< 5.0	**2000**	**82**	**280**	**150**	< 5.0	**190**	**730**	< 5.0
		Apr-11		**1600**	**1400**	< 5	< 5	**4000**	**71**	**550**	**200**	< 5	**110**	**2100**	< 5
	MW-28	Apr-09		**190**	**340**	< 0.50	< 0.50	**22**	**7400**	**11**	< 5.0	< 0.60	**8.8**	**140**	< 0.50
		Sep-09		**14**	**180**	< 5.0	< 5.0	**10**	**7700**	< 5.0	< 5.0	< 5.0	**5.7**	**49**	< 5.0
		Apr-10		**100**	**130**	< 5.0	< 5.0	**8.5**	**5100**	< 5.0	< 5.0	< 5.0	< 5.0 UJ	**62**	< 5.0
		Oct-10		**44**	**180**	< 5.0	< 5.0	**9.2**	**3700**	< 5.0	< 5.0	< 5.0	**5.2**	**58**	< 5.0
		Apr-11		< 5	**27**	< 5	< 5	< 5	**1100**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	**41**	< 5.0	< 5.0	< 5.0	**700**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
S Refinery (continued)	MW-49	Apr-09		**92**	**650**	< 0.50	< 0.50	**34**	**160**	**17**	< 5.0	< 0.60	**20**	**130**	< 0.50
		Apr-10		**73**	**790**	< 5.0	< 5.0	**16**	**110**	< 5.0	< 5.0	< 5.0	**9.6 J**	**120**	< 5.0
		Oct-10		**61**	**450**	< 5.0	< 5.0	**15**	**93**	**7.1**	< 5.0	< 5.0	**6.8**	**94**	< 5.0
		Apr-11		**62**	**510**	< 5	< 5	**12**	**110**	**9.6**	< 5	< 5	**11**	**94**	< 5
		Sep-11		**56**	**530**	< 5.0	< 5.0	**14**	**76**	**9.4**	< 5.0	< 5.0	**15**	**94**	< 5.0
		Sep-11	FD	**55**	**490**	< 5.0	< 5.0	**14**	**70**	**10**	< 5.0	< 5.0	**15**	**91**	< 5.0
	MW-50	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-09	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 UJ	< 5.0	< 15	< 5.0
		Nov-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-52	Apr-09		< 0.50	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-09	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-11	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-57	Nov-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-58	Apr-09		**31**	**730**	< 0.50	< 0.50	**37**	**220**	**16**	< 5.0	< 0.60	< 5.0	**45**	< 0.50
		Sep-09		**39**	**1800**	< 5.0	< 5.0	**120**	**190**	**17**	**23**	< 5.0	< 5.0	**85**	< 5.0
		Apr-10		**34**	**1100**	< 5.0	< 5.0	**47**	**180**	**19**	< 5.0	< 5.0	< 5.0	**34**	< 5.0
		Apr-10	FD	**34**	**1300**	< 5.0	< 5.0	**47**	**200**	**18**	< 5.0	< 5.0	< 5.0	**33**	< 5.0
		Oct-10		**53**	**6200**	< 5.0	< 5.0	**270**	**260**	**16**	**19**	< 5.0	**8.0**	**200**	< 5.0
		Apr-11		**9.8**	**680**	< 5	< 5	**21**	**480**	**13**	< 5	< 5	< 5	**32**	< 5
		Sep-11		< 5.0	**660**	< 5.0	< 5.0	< 5.0	**480**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-66	Apr-09		**19**	**2100**	< 0.50	< 0.50	**60**	**5400**	**78**	< 5.0	< 0.60	< 5.0	**21**	< 0.50
		Sep-09		**7.2**	**3300**	< 5.0	< 5.0	**37**	**5500**	**47**	< 5.0	< 5.0	< 5.0	**18**	< 5.0
		Apr-10		**6.0**	**2300**	< 5.0	< 5.0	**32**	**4200**	**36**	< 5.0	< 5.0	< 5.0 UJ	**21**	< 5.0
		Oct-10		**64**	**7500**	< 5.0	< 5.0	**190**	**2900**	**89 UB**	< 5.0	< 5.0	**24**	**130**	< 5.0
		Apr-11		< 5	**2200**	< 5	< 5	**13**	**4600**	**59**	< 5	< 5	< 5	< 15	< 5
		Apr-11	FD	< 5	**2000**	< 5	< 5	**10**	**4200**	**47**	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	**1200**	< 5.0	< 5.0	**9.8**	**3000**	**39**	< 5.0	< 5.0	< 5.0	< 15	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
S Refinery (continued)	MW-99	Apr-09		< 5.0	**550**	< 0.50	< 0.50	**41**	**97**	< 5.0	**13**	< 0.60	< 5.0	**26**	< 0.50
		Sep-09		**82**	**9200**	< 5.0	< 5.0	**380**	**5900**	**27**	**170**	< 5.0	**750**	**610**	< 5.0
		Apr-10		**120**	**9700**	< 25	< 25	**450**	**4300**	< 25	**340**	**< 25**	**2500 J**	**1100**	**< 25**
		Oct-10		**13**	**8000**	< 5.0	< 5.0	**19**	**5500**	< 5.0	**45**	< 5.0	**45**	**130**	< 5.0
		Apr-11		**40**	**6700**	< 5	< 5	**89**	**6200**	**5.9**	**25**	< 5	**36**	**100**	< 5
		Sep-11		**47**	**9300**	< 5.0	< 5.0	**200**	**3900**	**11**	**61**	< 5.0	**210**	**210**	< 5.0
	MW-101	Apr-09		**42**	**4700**	< 0.50	< 0.50	**150**	**2600**	**14**	**87**	< 0.60	**220**	**280**	< 0.50
		Sep-09		< 5.0	**180**	< 5.0	< 5.0	**8.5**	**100**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	**560 J**	< 5.0	< 5.0	**36**	**94 J**	< 5.0	< 5.0	< 5.0	< 5.0 UJ	< 15	< 5.0
		Nov-10		< 5.0	**420**	< 5.0	< 5.0	**25**	**91**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	**1100**	< 5	< 5	**26**	**90**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	**370**	< 5.0	< 5.0	**11**	**83**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-103	Mar-09		**220**	**1000**	< 0.50	< 0.50	**610**	< 5.0	**190**	**89**	< 0.60	**120**	**410**	< 0.50
		Sep-09		**100**	**860**	< 5.0	< 5.0	**350**	< 5.0	**90**	**34**	< 5.0	**22**	**170**	< 5.0
		Apr-10		**81**	**810**	< 5.0	< 5.0	**380**	< 5.0	**59**	**20**	< 5.0	**7.2**	**170**	< 5.0
		Apr-11		**10**	**650**	< 5	< 5	**190**	< 5	**18**	< 5	< 5	< 5	**30**	< 5
	MW-104	Mar-09		< 0.50	**34**	**61**	< 0.50	< 5.0	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	**190**	**26**	< 5.0	**10**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	**28**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	**120**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10	FD	< 5.0	**150**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	**8.9**	**66**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	**160**	**9.3**	< 5.0	**6.4**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-11	FD	< 5.0	**170**	**9.5**	< 5.0	**6.6**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-106	Sep-09		**290**	**15000**	< 5.0	< 5.0	**1100**	**39**	**180**	**< 250**	< 5.0	**260**	**560**	< 5.0
		Apr-10		**240**	**9300**	< 50	< 50	**710**	< 50	**130**	< 50	**< 50**	**120 J**	**440**	**< 50**
		Oct-10		**250**	**14000**	< 50	< 50	**600**	< 50	**130**	< 50	**< 50**	**140**	**450**	**< 50**
		Apr-11		**190**	**9700**	< 5	< 5	**1300**	**33**	**100**	< 5	< 5	**110**	**350**	< 5
		Sep-11		**160**	**9900**	< 50	< 50	**180**	< 50	**82**	< 50	**< 50**	**110**	**330**	**< 50**
	MW-107	Sep-09		**320**	**14000**	< 5.0	< 5.0	**1400**	**7400**	**190**	**< 250**	< 5.0	**36**	**570**	< 5.0
		Mar-10		**300**	**10000 J**	< 5.0	< 5.0	**1000**	**5800 J**	**150**	< 120	< 5.0	**35**	**490**	< 5.0
		Nov-10		**250**	**11000**	< 5.0	< 5.0	**1000**	**4600**	**140**	< 120	< 5.0	**39**	**460**	< 5.0
		Apr-11		**270**	**8200**	< 5	< 5	**1100**	**4600**	**140**	< 5	< 5	**28**	**380**	< 5
		Sep-11		**23**	**97**	< 5.0	< 5.0	**110**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	MW-109	Jan-11		**65**	**1200**	< 5	< 5	**850**	< 5	**80**	**8.2**	< 5	**17**	**190**	< 5
		Jan-11	FD	**50**	**1000**	< 5	< 5	**780**	< 5	**59**	**5.8**	< 5	**12**	**140**	< 5
		Apr-11		**48**	**1400 UJ**	< 5	< 5	**470 UJ**	< 5	**29**	< 5	< 5	**5.5**	**41**	< 5
		Sep-11		**19**	**550**	< 5.0	< 5.0	**190**	< 5.0	< 5.0	< 5.0	< 5.0	**6.7**	< 15	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Volatile Organic Compounds											
		Analyte:		1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:		15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:		EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**												
S Refinery (continued)	MW-110	Jan-11		**150**	**370**	< 5	< 5	**1600**	< 5	**160**	**26**	< 5	**15**	**370**	< 5
		Apr-11		**170**	**270**	< 5	< 5	**600**	< 5	**60**	**11**	< 5	**6.8**	**130**	< 5
		Sep-11		**24**	**110**	< 5.0	< 5.0	**130**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	RW-4	Apr-10		**7.1**	**280**	< 5.0	< 5.0	< 5.0	**2500**	< 5.0	< 5.0	< 5.0	**5.3 J**	**36**	< 5.0
		Apr-11		< 5	**500**	< 5	< 5	< 5	**7700**	< 5	< 5	< 5	**6.1**	**19**	< 5
	RA-313	Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	RA-1227	Nov-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Nov-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
Field E of Refinery	KWB-1A	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	KWB-3AR	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	KWB-7	Apr-09		< 0.50	< 5.0	< 0.50	< 0.50	< 0.50	**59**	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**42**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**34**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**22**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	**16**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	**41**	< 5.0	< 5.0	< 5.0	**19**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	KWB-9	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	KWB-11A	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	**12**	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**24**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**6.5**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	**23**	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-11	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
Field E of Refinery (continued)	KWB-11B	Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	KWB-12A	Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	KWB-12B	Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-11	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	RW-11-1	Nov-10		**5.0**	**160**	< 5.0	< 5.0	**24**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	RW-18	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	RA-4196	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**5.4**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**6.2**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Nov-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**6.4**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Apr-11	FD	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Sep-11	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
	RA-4798	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**18**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Nov-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**12**	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
Crossgradient	KWB-13	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Apr-09	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Sep-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	NP-5	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	RA-3156	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Nov-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Sep-11		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Volatile Organic Compounds											
		Analyte:	1,2,4-Trimethylbenzene	Benzene	Chloroform	cis-1,2-DCE	Ethylbenzene	MTBE	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene
		Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		CGWSL:	15	5	100	70	700	125	30	203	5	750	620	5
		CGWSL Source:	EPA TW	EPA MCL	EPA MCL	EPA MCL	EPA MCL	NMED TW	WQCC HH	NMED TW	EPA MCL	WQCC HH	WQCC HH	EPA MCL
Area	**Location**	**Date**	**Dup**											
Upgradient	MW-53	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10	FD	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	UG-1	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10			< 5.0			< 5.0	< 5.0				< 5.0	< 15	
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	UG-2	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10			< 5.0			< 5.0	< 5.0				< 5.0	< 15	
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
	UG-3R	Apr-09		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.60	< 0.50	< 1.0	< 0.50
		Oct-09		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Apr-10			< 5.0			< 5.0	< 5.0				< 5.0	< 15	
		Oct-10		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 15	< 5.0
		Mar-11		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5
		Mar-11	FD	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 15	< 5

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Cyanide	Cations/Anions						Water Quality		
		Analyte:		Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:		ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:		200		250	1.6			600		1000	
		CGWSL Source:		EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**										
NCL	MW-18	Apr-09			344	177	0.721	1.45	76.9	1240	399	2690	13.7
		Sep-09			359	173	0.713	1.29	90.3	1160	430	2680	11.2
		Mar-10			372 UB	178 UB	1.03	1.70	92.1	1330	391	2850	14.7
		Oct-10		< 20.0	328 J	207	0.981	1.56	91.7	1110		2650	14
		Apr-11		< 20	351	234	1.1	1.22	105	1220		2670	
		Sep-11		< 20.0	300	192	0.560	< 1.00	76.2	1020		2650	
	MW-54A	Apr-09			384	286	0.668	< 0.400	48.4	754	520	2230	< 0.500
		Oct-09				249	0.768			779	408	2240	< 0.500
		Oct-09	FD			262	0.797			758	504	2280	< 0.500
		Apr-10			408 UB	226 UB	1.09	< 1.00	67.5 UB	843	497	2380	2.83
		Oct-10			343	205	1.00	< 2.00	57.2	671		1980	< 0.100
		Apr-11			329	222	0.983	< 1	65	749		2020	
		Sep-11			356	209	0.902	< 1.00	67.8	811		2140	
	MW-54B	Apr-10			318 UB	153 UB	0.492	< 1.00	47.6 UB	808	388	2080	< 0.500
		Apr-11			311	190	0.881	1.16	50.8	1400		2650	
	MW-108	Oct-09				120	4.93			978	593	2580	0.544
		Mar-10			350 UB	161 UB	4.24	0.878	111 UB	1150	601	2610	< 0.500
		Apr-10			258 UB	90.8	1.42	4.18	48.3 UB	358	676	1610	< 0.500
		Oct-10			436	191	3.92	6.18	185	1510		3340	< 1.0
		Apr-11			364	208	2.53	1.47	136	1330		3040	
		Apr-11	FD		357	205	2.56	1.4	136	1320		3110	
		Sep-11			362	196	4.17	4.40	189	1570		3680	
	NCL-31	Mar-10			369 UB	176 UB	1.34	0.441	190 UB	1480	591	3000	< 0.500
		Oct-10			278	179	1.52	< 1.00	187	859		2250	< 0.10
		Apr-11			344	161	1.29	< 1	180	1400		2670	
		Sep-11			285	142	1.02	< 1.00	132	1250		2570	
	NCL-32	Apr-09			453	204	1.49	5.83	64.8	1130	386	2560	< 0.500
		Sep-09			989	198	2.54	25.3	76.4	1100	290	2540	< 1.00
		Mar-10			1570	97.5 UB	1.95	36.6	80.4	715	190	1920	< 0.500
		Oct-10			423	43.4	2.40	21.6	26.1 UB	840		1680	4.9
	NCL-33	Apr-09			476	511	2.22	4.06	94.4	937	483	3160	1.03
		Sep-09			430	468	2.40	4.80	88.0	882	450	3010	< 1.00
		Mar-10			450 UB	462	2.46	4.02	88.0	645	536	2480	< 0.500
		Oct-10			472	383	2.59	5.20	99.5 UB	732		2420	0.12 J
		Apr-11			396	499	2.44	3.98	106	714		2180	
		Sep-11			294	351	1.99	3.21	84.9	559		2140	
	NCL-34	Apr-09			256	434	2.22	1.75	112	134	570	1860	1.03
		Sep-09			230	379	1.28	2.04	121	128	550	1890	< 1.00
		Mar-10			188 UB	187	1.30 J	1.16 J	103 UB	121 J	667	1190 J	< 0.500
		Mar-10	FD		381 UB	162 UB	4.60 J	0.961 J	119 UB	1170 J	576	2800 J	< 0.500
		Oct-10			276	410	1.52	1.93	112 UB	148		1460	0.18
		Oct-10	FD		253 UB	435	1.52	2.09	107	139		1670	0.29

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Cyanide	Cations/Anions						Water Quality		
		Analyte:	Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:	ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:	200		250	1.6			600		1000	
		CGWSL Source:	EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**									
NCL (continued)	NCL-44	Apr-09			268	171	1.35	1.95	54.5	496	630	1800	< 0.500
		Sep-09			249	185	1.40	2.15	59.2	469	550	1710	< 1.00
		Mar-10			267 UB	166 UB	1.55	2.08	57.3	476	546	1680	< 0.500
		Oct-10			264	168	1.67	2.18	61.5 UB	443		1620	< 0.10
		Apr-11			280	168	1.54	2.17	65.6	458		1620	
		Sep-11			213	176	1.48	1.53	48.4	383		1610	
	NCL-49	Apr-09			461	165	< 0.500	0.708	117	1720	260	3180	9.65
		Apr-09	FD		457	163	< 0.500	0.707	115	1720	202	3210	9.29
		Oct-09				152	0.561			1630	224	3190	9.33
		Apr-10			443	134 UB	0.486	< 1.00	120 UB	1720	229	3130	8.94
		Oct-10			409	134	0.641	< 2.00	106	1590		2900	5.42
		Apr-11			404	135	0.604	< 1	114	1270		2960	
		Sep-11			455	124	0.208	< 1.00	125	1700		2850	
	RW-17A	Mar-10			459 UB	494 UB	2.61	5.40	376	3320	526	6680	< 0.500
TEL	TEL-1	Apr-09			214	249	1.96	0.805	444	919	582	2590	< 0.150
		Apr-09	FD		205	251	1.93	1.00	462	908	618	2560	< 0.500
		Sep-09			280	126	2.14	0.881	430	507	640	2850	< 1.00
		Apr-10			542	170 UB	2.59	1.75	278	2150	382	4120	< 0.500
		Oct-10			267	256	2.24	1.10	425	967		2660	< 10.0
		Apr-11			264	308	2.2	1.02	500	1060		2870	
		Sep-11			251	232	1.90	< 1.00	391	1150		3030	
	TEL-2	Apr-09			224	392	0.562	1.19	384	825	825	3040	< 0.150
		Sep-09			206	411	0.900	1.34	357	737	930	3030	< 1.00
		Apr-10			304 UB	278 UB	0.833	2.54	337	1130	864	3440	< 0.500
		Oct-10			219	188	1.07	1.44	320	746		2570	0.293
		Apr-11			240	254	0.928	1.71	351	828		2420	
		Sep-11			199	203	0.865	1.31	277	711		2680	
	TEL-3	Apr-09			304	597	2.06	3.92	325	580	698	2660	< 0.500
		Sep-09			611	34.2	2.93	5.64	52.3	1520	400	3180	< 1.00
		Apr-10			570	14.2	2.92	5.27	28.3	1640	372	2900	< 0.500
		Apr-10	FD		546	14.0 UB	2.89	5.52	31.8	1530	342	2860	< 0.500
		Oct-10			568	8.82	3.14	6.99	16.1 UB	1300		2530	< 10.0
		Apr-11			558	35.1	3	5.76	29.1	1570		2850	
		Sep-11			460	50.0	3.04	5.34	26.6	1550		2980	
	TEL-4	Apr-09			274	508	< 0.500	0.593	219	680	689	2570	< 0.150
		Sep-09			302	595	0.615	0.547	263	844	920	3220	< 1.00
		Apr-10			339 UB	523	0.602	0.538	311	957	774	3400	< 0.500
		Oct-10			270	414	0.787	< 1.00	251	556		2370	< 0.100
		Apr-11			295	564	0.804	< 1	341	830		3010	
		Sep-11			231	437	0.840	< 1.00	277	903		3140	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Cyanide	Cations/Anions						Water Quality		
		Analyte:		Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:		ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:		200		250	1.6			600		1000	
		CGWSL Source:		EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**										
EP	MW-1R	Apr-09			646	1830	0.515	3.62	1150	1840	167	6240	< 0.500
		Sep-09			538	1690	0.612	4.18	950	1850	198	5960	< 1.00
		Apr-10			576	1640	0.591	4.24	946 UB	1900	207	6040	< 0.500
		Mar-11			549	1250	0.662	4.53	889	1400		5360	
	MW-2A	Apr-09			562	3750	4.74	5.34	2550	2960	335	10400	0.712
		Apr-09			478	3230	2.64	9.23	2540	4960	523	12800	< 0.150
		Sep-09			394	2020	5.45	4.58	1180	1980	207	6900	< 1.00
		Apr-10			722	4780	4.16	5.85	3680	3940	378	6290	< 0.500
		Oct-10			664	3710	20.3	6.74	3010 UB	3550		10200	< 0.100
		Oct-10	FD		618	3480 J	20.0	6.37	2830 UB	3370 J		10100 J	< 0.100
		Mar-11			536	2800	3.72	5.26	2870 J	2950		10600	
		Sep-11			528	4490	2.40	5.34	3420	4720		14400	
	MW-2B	Apr-10			470 UB	586 UB	0.933	3.08	441 UB	1160 UB	168	3100	< 0.500
	MW-3	Apr-09			517	1090	1.91	4.26	730	2260	236	4960	< 0.500
		Sep-09			473	976	2.11	4.83	699	1870	236	4700	< 1.00
		Apr-10			578	906 UB	1.94 J	3.82	838 UB	2030 UB	209	4850	< 0.500
		Oct-10			454 UB	894	2.31	5.59	676 UB	1580		4360	< 0.100 UJ
		Mar-11			489	731	1.59	4.7	770	1560		4500	
		Sep-11			324	892	1.67	3.54	721	1510		4230	
	MW-4A	Apr-09			352	1180	1.55	5.33	725	1540	216	4540	< 0.500
		Sep-09			380	1280	1.65	3.74	833	1570	222	4710	< 1.00
		Apr-10			408 UB	1150 UB	1.70	5.00	778 UB	1700	251	4500	< 0.500
		Apr-10	FD		372 UB	1190 UB	1.61	4.48	718 UB	1780	253	4960	< 0.500
		Oct-10											
		Oct-10			443 UB	1310 J	18.9	5.74	955 UB	1700 J		4660 J	< 0.100 UJ
		Apr-11			422	1080	1.52	5.02	868	1320		4650	
		Sep-11			426	1220	1.63	3.68	828	1890		4910	
	MW-4B	Apr-10			298 UB	1010	0.757	2.36	612 UB	1200	207	3470	< 0.500
		Apr-11			383	660	1.01	3.53	560	958		3660	
	MW-5A	Sep-09			468	3360	2.71	7.98	2800	5160	414	13200	< 1.00
		Sep-09	FD		513	3320	2.70	8.28	3130	5160	419	16400	< 1.00
		Apr-10			483	4010	2.34	7.92	3340	7050	497	15200	< 0.500
		Oct-10			584	2760	18.7	10.4	3310 UB	4660		10700	< 0.100
		Apr-11			536	2970	1.43	8.19	3310	4590		13800	
		Sep-11			492	3670	2.37	7.68	3310	6330		15900	
	MW-5B	Apr-10			540	1720	0.852	9.18	1660	2740	358	7900	< 0.500
		Apr-11			471	1560	1.31	8.77	1400	1800		6310	
	MW-6A	Apr-09			294	864	1.35	1.32	733	1510	148	3720	< 0.500
		Sep-09			259	876	1.32	1.18	679	1410	130	3680	< 0.100
		Apr-10			316 UB	963 UB	1.33	1.20	770 UB	1540 UB	136	3700	< 0.500
		Mar-11			319	680	1.13	1.52	758	1120		3680	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Cyanide	Cations/Anions						Water Quality		
		Analyte:	Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:	ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:	200		250	1.6			600		1000	
		CGWSL Source:	EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**									
EP (continued)	MW-6B	Apr-10			**447 UB**	**1290 UB**	**0.544**	**4.22**	**694 UB**	**1530 UB**	**104**	**4570**	< 0.500
		Mar-11			**377**	**707**	**1.37**	**3.91**	**664**	**989**		**3160**	
	MW-7A	Apr-09			**434**	**1980**	**0.972**	**4.02**	**1820**	**2450**	**455**	**6880**	< 0.150
		Sep-09			**360**	**1960**	**1.10**	**3.90**	**1550**	**2430**	**246**	**7580**	< 0.100
		Apr-10			**341 UB**	**1850**	**1.16**	**4.07**	**1560 UB**	**2510**	**278**	**6580**	< 0.500
		Oct-10			**393 UB**	**1570**	**16.5**	**4.19**	**1630 UB**	**2080**		**6330**	< 0.100
		Apr-11			**302**	**1510**	**1.28**	**3.95**	**1650**	**1760**		**6720**	
		Sep-11			**310**	**1730**	**1.08**	**3.74**	**1370**	**2300**		**6360**	
	MW-7B	Apr-10			**574**	**1230**	**0.913**	**6.42**	**890 UB**	**1910**	**189**	**5030**	< 0.500
		Apr-11			**485**	**881**	**0.921**	**6.58**	**600**	**1340**		**4080**	
	MW-10	Apr-09				**1370**	**0.519**	**5.69**	**928**	**1880**	**216**	**5260**	< 0.500
		Sep-09			**497**	**1680**	**0.596**	**3.29**	**945**	**1900**	**236**	**5530**	< 0.100
		Apr-10			**516**	**1340 UB**	**0.517**	**3.22**	**1060 UB**	**1940**	**249**	**5150**	< 0.500
		Jun-10											
		Oct-10			**568 UB**	**1160**	**0.730**	**3.70**	**977**	**1710**		**5060**	< 1.00
		Apr-11			**544**	**991**	**0.614**	**3.55**	**973**	**1620**		**4970**	
		Sep-11			**468**	**1310**	**0.428**	**3.46**	**842**	**1880**		**4970**	
		Sep-11	FD		**450**	**1300**	**0.430**	**3.39**	**800**	**1870**		**5280**	
	MW-11A	Apr-09			**1160**	**9040**	**0.503**	**21.2**	**4930**	**2820**	**416**	**18000**	< 0.500
		Sep-09			**1010**	**9290**	**0.698**	**21.9**	**4370**	**2850**	**366**	**19100**	< 0.100
		Apr-10			**1160**	**8570**	**0.710**	**20.5**	**4890**	**2980**	**418**	**17600**	< 0.500
		Apr-10	FD		**1130**	**8300**	**0.675**	**21.9**	**4810**	**2880**	**398**	**17400**	< 0.500
		Mar-11			**1350**	**6610**	**0.408**	**22.5**	**5260**	**2260**		**17400**	
	MW-11B	Apr-10			**862**	**6250**	**0.723**	**34.4**	**3680 R**	**3020**	**259**	**14500**	< 0.500
		Mar-11			**1190**	**4920**	**0.606**	**36.3**	**4070**	**2280**		**13600**	
	MW-15	Apr-09			**621**	**1280**	**3.43**	**7.25**	**806**	**2070**	**167**	**5290**	< 0.150
		Sep-09			**620**	**1500**	**1.22**	**5.85**	**775**	**1970**	**111**	**5830**	< 0.100
		Apr-10			**650**	**1280 UB**	**4.01**	**7.74**	**816 UB**	**2150**	**199**	**5520**	< 0.500
		Mar-11			**614**	**914**	**3.95**	**8.43**	**971**	**1460**		**5100**	
	MW-18A	Apr-09			**649**	**5410**	**2.41**	**31.3**	**3530**	**5000**	**372**	**15600**	< 0.150
		Sep-09			**616**	**6130**	**2.32**	**38.0**	**3590**	**5180**	**308**	**16400**	< 0.100
		Apr-10			**727**	**5220**	**1.16**	**35.6**	**3810**	**5250**	**328**	**13800**	< 0.500
		Jun-10											
		Oct-10		< 20.0	**680 UB**	**6000**	**19.3**	**43.2**	**3630 UB**	**5480**		**14400**	< 0.100
		Apr-11		< 20	**601**	**4550**	< 0.1	**39.7**	**4430**	**3850**		**16200**	
		Sep-11		< 20.0	**669**	**5850**	**1.65**	**36.8**	**3680**	**5150**		**17700**	
	MW-18B	Apr-10			**604**	**1060 UB**	**0.636**	**6.34**	**701 UB**	**2060**	**199**	**5110**	< 0.500
		Apr-11			**450**	**739**	**0.905**	**7.31**	**445**	**1380**		**1820**	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Cyanide	Cations/Anions						Water Quality		
		Analyte:	Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:	ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:	200		250	1.6			600		1000	
		CGWSL Source:	EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**									
EP (continued)	MW-22A	Apr-09			565	1750	0.561	3.64	1320	1920	196	5780	< 0.500
		Sep-09			480	1810	0.517	3.13	1140	2040	217	6430	< 0.100
		Apr-10			474	1650	0.344	3.45	1140 UB	2030	219	6070	< 0.500
		Apr-10	FD		469	1620	0.360	3.51	1140 UB	1960	229	5860	< 0.500
		Oct-10											
		Apr-11			558	1550	0.496	3.91	1240	1690		5680	
		Sep-11			445			3.34	1060				
	MW-22B	Apr-10			485	1310 UB	0.364	3.71	972 UB	1910	249	5380	< 0.500
		Apr-11			515	1210	0.547	3.83	891	1620		4780	
	MW-70	Apr-09			647	1100	< 0.500	4.38	637	2010	264	4990	< 0.150
		Sep-09			576	1050	0.606	4.69	534	1970	217	5390	< 0.100
		Apr-10			651	838 UB	0.481	4.79	663 UB	1760	209	4970	< 0.500
		Jun-10											
		Oct-10											
		Apr-11			584	775	0.302	4.7	591	1450		4460	
		Sep-11			530			4.49	519				
	MW-72	Mar-09			762	3800	5.84	8.88	2130	2760	317	10600	< 0.500
		Sep-09			747	4050	5.36	9.55	2200	2820	228	10800	< 0.100
		Apr-10			904	3790	5.88	9.30	2540	2860	368	9710	< 0.500
		Oct-10			666 UB	2940	5.92	8.78	1950	2370		8530	< 1.00
		Mar-11			596	2950	6.31	9.2	2150	2240		9050	
		Sep-11			568	4100	6.63	8.69	1760	2790		8940	
	MW-73	Mar-09			571	2410	2.06	2.20	2040	3770	452	10200	< 0.500
		Sep-09			542	2290	3.38	3.71	2190	3570	402	9130	1.44
		Apr-10			699	2190	3.85 J	3.81	2710	3640	447	9390	1.26
		Oct-10			633 UB	1920	1.96	2.60	2170	3250		8920	< 0.100 UJ
		Mar-11			554	1740	1.26	2.56	2450	2790		8760	
		Sep-11			519	2240	1.38	3.32	1960	3680		8130	
	MW-74	Mar-09			636	2060	8.53	36.2	1930	3270	360	8140	0.552
		Sep-09			582	2050	8.73	37.9	1880	3240	373	8610	3.16
		Apr-10			683	1960	8.49	35.3	2270	3440	388	8920	13.9
		Apr-10	FD		655	1950	8.01	34.4	2250	3450	368	8820	13.8
		Oct-10			643	1810	23.3	47.8	2410 UB	3330		8670	< 0.100
		Mar-11			598	1640	7.9	47.2	2260	2710		7990	
		Sep-11			561	2000	7.78	35.4	1750	3450		7820	
	MW-75	Mar-09			340	1480	9.93	21.5	1510	2020	509	5840	< 0.500
		Sep-09			322	1500	8.48	18.1	1370	1840	591	5900	< 0.100
		Sep-09	FD		340	1550	8.46	18.2	1430	1910	581	5800	< 0.100
		Apr-10			444 UB	1450 J	8.66 J	20.0 J	1890 J	1940	626 J	6060 J	< 0.500
		Oct-10			421 UB	1310	21.7	19.7	1760 UB	1930		5330	< 0.100
		Mar-11			330	1150	7.96	22	1940	1460		5880	
		Sep-11			327	1460	7.36	16.9	1380	1960		5340	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

Analyte Group:				Cyanide	Cations/Anions						Water Quality		
Analyte:				Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
Units:				ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
CGWSL:				200		250	1.6			600		1000	
CGWSL Source:				EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**										
EP (continued)	MW-76	Mar-09			**415**	**1400**	**3.32**	**25.2**	**949**	**1960**	**266**	**5460**	**0.724**
		Sep-09			**450**	**1310**	**3.22**	**23.6**	**1130**	**2000**	**344**	**5710**	< 0.100
		Apr-10			**418 UB**	**1380 UB**	**3.24**	**28.1**	**1010 UB**	**2030 UB**	**288**	**5320**	< 0.500
		Oct-10			**389 UB**	**1220**	**2.72**	**28.4**	**904 UB**	**1640**		**4850**	< 0.100
		Mar-11			**384**	**1110**	**3.09**	**30.4**	**1400**	**1470**		**4690**	
		Sep-11			**338**	**1280**	**2.59**	**23.1**	**799**	**1730**		**4930**	
	MW-77	Mar-09			**439**	**1580**	**2.76**	**43.3**	**1210**	**2420**	**463**	**6460**	< 0.200
		Sep-09			**445**	**1510**	**2.53**	**49.7**	**1380**	**2310**	**494**	**6080**	< 0.100
		Apr-10			**505**	**1410 UB**	**2.15**	**55.2**	**1330 UB**	**2810**	**517**	**6920**	< 0.500
		Oct-10		< 100	**452 UB**	**1170**	**1.37**	**62.3**	**1140 UB**	**2200**		**2340**	< 0.100
		Mar-11		< 20	**400**	**1100**	**2.44**	**39**	**1230**	**1580**		**5460**	
		Mar-11	FD	< 20	**399**	**1090**	**2.44**	**37.9**	**1240**	**1560**		**5240**	
		Sep-11		< 20.0	**477**	**785**	**1.50**	**65.0**	**1320**	**3610**		**7660**	
	MW-78	Mar-09			**372**	**1110**	**8.38**	**21.9**	**835**	**2000**	**443**	**5420**	< 0.200
		Sep-09			**339**	**1080**	**11.1**	**20.3**	**805**	**1760**	**358**	**5030**	< 0.100
		Apr-10			**369 UB**	**622**	**15.2**	**22.1**	**650 UB**	**2150**	**557**	**5120**	**1.06**
		Jun-10											
		Mar-11			**345**	**811**	**8.82**	**26.4**	**970**	**1480**		**4700**	
	MW-79	Mar-09	FD		**606**	**2290**	**11.4**	**11.3**	**1690**	**2460**	**216**	**6680 H**	**0.760**
		Mar-09			**562**	**2120**	**11.4**	**10.1**	**1490**	**2230**	**246**	**6600**	**0.762**
		Sep-09			**607**	**2170**	**10.2**	**9.80**	**1400**	**2180**	**218**	**7770**	< 1.00 J
		Apr-10			**684**	**2230**	**10.0**	**10.5**	**1630 UB**	**2410**	**219**	**6670**	**1.13**
		Oct-10			**804 UB**	**1790**	**9.62**	**10.7**	**1540**	**2160**		**6530**	**2.00**
		Mar-11			**525**	**1590**	**8.9**	**9.84**	**1380**	**2060**		**6240**	
		Sep-11			**412**	**1660**	**10.5**	**8.74**	**1330**	**2600**		**5960**	
	MW-80	Mar-09			**535**	**1300**	**4.75**	**3.56**	**1200**	**1900**	**207**	**5110**	**0.809**
		Sep-09			**537**	**1340**	**4.28**	**3.57**	**851**	**1930**	**184**	**5650**	< 0.100
		Apr-10			**720**	**1330 UB**	**3.70**	**3.54**	**1060 UB**	**2130**	**164**	**5750**	< 0.500
		Mar-11			**528**	**1190**	**3.13**	**4.08**	**1030**	**1680**		**4820**	
	MW-81	Mar-09			**566**	**1490**	**8.92**	**8.81**	**1060**	**2260**	**286**	**6140**	**21.6**
		Sep-09			**501**	**1290**	**8.55**	**6.50**	**993**	**1990**	**218**	**4990**	**4.57**
		Apr-10			**625**	**1240 UB**	**8.55**	**8.77**	**1380 UB**	**2250**	**268**	**5790**	**25.7**
		Mar-11			**478**	**948**	**7.92**	**8.7**	**1340**	**1610**		**5080**	
	MW-82	Mar-09			**348**	**1460**	**13.1**	**8.91**	**1630**	**2380**	**852**	**6320**	< 0.500
		Sep-09			**327**	**1480**	**13.4**	**9.14**	**1640**	**2420**	**718**	**7090**	< 1.00
		Apr-10			**382 UB**	**1530 UB**	**11.0**	**8.25**	**1930**	**2390**	**994**	**6320**	< 0.500
		Mar-11			**318**	**1170**	**13.1**	**10.4**	**2020**	**2020**		**6120**	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Cyanide	Cations/Anions						Water Quality		
		Analyte:	Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:	ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:	200		250	1.6			600		1000	
		CGWSL Source:	EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**									
EP (continued)	MW-83	Mar-09			339	1180	4.03	29.2	946	1840	502	5050	< 0.500
		Sep-09			386	715	4.32	41.8	1010	2950	655	6690	< 1.00
		Apr-10			334 UB	1020 UB	3.55	34.8	936 UB	2410	527	5490	< 0.500
		Jun-10											
		Oct-10			433 UB	440	4.73 J	51.5	694 UB	2940		17300	2.96
		Mar-11			336	1010	3.17	29.4	996	1450		4420	
		Sep-11			365	960	3.12	23.0	725	1940		5280	
	MW-84	Mar-09			608	1770	4.84	6.64	1400	3490	561	8470	< 0.500
		Sep-09			654	2010	4.84	6.32	1560	3780	434	8380	< 1.00
		Apr-10			622	1580 UB	6.79	7.51	1560 UB	4100	487	9060	< 0.500
		Oct-10											
		Mar-11			586	1470	5.79	7.64	1480	2870		8400	
		Sep-11											
	MW-87	Apr-09			677	4340	1.52	23.1	2670	4110	255	14300	< 0.500
		Sep-09			594	4290	1.67	22.4	2720	4300	270	13000	< 1.00
		Apr-10			697	4100	0.913	23.3	3120	4260	268	11600	< 0.500
		Oct-10											
		Oct-10	FD										
		Apr-11			610	3340	1.47	21.5	2660	3310		11800	
		Sep-11			556			21.0	2460				
	MW-88	Apr-09			374	1470	0.733	3.79	1010	1890	201	5580	0.595
		Apr-09	FD		392	1500	0.765	2.94	1030	1990	192	6500	< 0.500
		Sep-09			348	1370	0.814	2.79	973	1800	207	5380	< 1.00
		Sep-09	FD		324	1370	0.818	2.69	901	1800	212	5390	< 1.00
		Apr-10			409 UB	1370 UB	0.917	3.21	1080 UB	1910	219	5760	< 0.500
		Oct-10											
		Apr-11			442	1290	1.01	3.1	1320	1650		5450	
		Apr-11	FD		428	1350	1.1	3.04	1150	1730		5050	
		Sep-11			306			2.87	848				
	OCD-1R	Apr-09			569	2170	5.26	5.21	1220	2220	172	6220	< 0.500
		Apr-10			668	2720	4.93	5.09	1920	2740	268	7350	< 0.500
		Oct-10											
		Mar-11			532	1810	4.09	4.51	1800	2010		7200	
		Sep-11			510			4.84	2340				
	OCD-2A	Mar-09	FD		656	2270	0.776	4.81	1390	2650	236	6980 H	0.714
		Apr-09			590	2360	0.811	4.09	1250	2770	175	7080	< 0.500
		Sep-09			482	1570	0.718	3.64	825	1770	169	5380	< 1.00
		Apr-10			604	1910	1.11	2.94	1430 UB	2770	259	7030	< 0.500
		Oct-10											
		Mar-11			577	1300	1.02	3.91	1210	1790		5850	
		Mar-11	FD		587	1250	0.926	3.93	1310	1670		5820	
		Sep-11			516			3.97	582				

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Cyanide	Cations/Anions						Water Quality		
		Analyte:		Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:		ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:		200		250	1.6			600		1000	
		CGWSL Source:		EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**										
EP (continued)	OCD-2B	Apr-10			**676**	**1420**	**0.757**	**5.53**	**776 UB**	**1860**	**128**	**5330**	< 0.500
	OCD-3	Apr-09			**426**	**1010**	**0.783**	**12.9**	**596**	**1350**	**125**	**3700**	< 0.500
		Sep-09			**377**	**958**	**0.949**	**11.4**	**490**	**1490**	**130**	**4120**	< 1.00
		Apr-10			**562**	**1410**	**0.896**	**12.6**	**1100 UB**	**2150**	**219**	**5640**	< 0.500
		Oct-10											
		Mar-11			**449**	**697**	**0.997**	**12.4**	**1040**	**1250**		**4680**	
		Sep-11			**341**			**10.5**	**445**				
	OCD-4	Apr-09			**777**	**4630**	**0.595**	**35.4**	**2380**	**2910**	**161**	**10800**	< 0.500
		Sep-09			**743**	**4590**	**0.723**	**33.4**	**2460**	**2770**	**193**	**10800**	< 1.00
		Apr-10			**868**	**4630**	**0.780**	**35.5**	**2890**	**2910**	**229**	**11600**	< 0.500
		Oct-10											
		Apr-11			**786**	**4290**	**0.699**	**41.6**	**3160**	**2350**		**11100**	
		Sep-11			**732**			**35.0**	**2240**				
	OCD-5	Apr-09			**789**	**4950**	**0.614**	**32.8**	**2820**	**2990**	**184**	**11600**	< 0.500
		Sep-09			**764**	**4690**	**0.754**	**29.9**	**2780**	**2890**	**217**	**12600**	< 1.00
		Apr-10			**878**	**4580**	**0.775**	**29.2**	**3170**	**2880**	**199**	**12100**	< 0.500
		Oct-10											
		Apr-11			**706**	**3890**	**0.75**	**35**	**3020**	**2220**		**5410**	
		Sep-11			**686**			**27.0**	**2830**				
	OCD-6	Apr-09			**599**	**3480**	**3.22**	**11.6**	**2710**	**3270**	**566**	**11400**	< 0.500
		Sep-09			**545**	**3680**	**3.29**	**12.2**	**2590**	**3170**	**564**	**11300**	< 1.00
		Apr-10			**773**	**3660**	**3.15**	**13.1**	**3310**	**2960**	**487**	**10400**	< 0.500
		Oct-10											
		Mar-11			**600**	**2630**	**3.18**	**13**	**3050**	**2550**		**10200**	
		Sep-11			**544**			**13.1**	**2470**				
	OCD-7A	Apr-09			**550**	**2170**	**4.57**	**7.16**	**2000**	**3050**	**601**	**9210**	**0.673**
		Sep-09			**588**	**2200**	**4.32**	**7.32**	**2040**	**3280**	**540**	**9530**	< 1.00
		Sep-09	FD		**512**	**2160**	**4.41**	**6.69**	**1840**	**3220**	**554**	**9890**	< 1.00
		Apr-10			**719**	**2010**	**4.12**	**6.86**	**2690**	**3210**	**597**	**8740**	< 0.500
		Oct-10											
		Mar-11			**572**	**1610**	**3.59**	**8.28**	**2590**	**2450**		**8150**	
		Sep-11			**512**			**6.55**	**1790**				
	OCD-7B	Apr-10			**642**	**676 UB**	**1.00**	**10.7**	**841 UB**	**2330**	**193**	**4900**	< 0.500
		Apr-10	FD		**628**	**688 UB**	**1.03**	**10.9**	**832 UB**	**2380**	**189**	**4780**	< 0.500
		Mar-11			**554**	**643**	**1.05**	**13**	**718**	**1580**		**4430**	
	OCD-8A	Apr-09			**573**	**2700**	**2.84**	**7.88**	**2220**	**3380**	**499**	**9550**	< 0.150
		Sep-09			**645**	**2880**	**3.40**	**9.25**	**2500**	**3840**	**520**	**10100**	< 1.00
		Apr-10			**576**	**2270**	**2.87**	**7.73**	**2100**	**3420**	**527**	**8930**	< 0.500
		Oct-10		< 20.0									
		Apr-11		< 20	**627**	**2720**	**3.22**	**10.2**	**2860**	**3510**		**9840**	
		Apr-11	FD	< 20	**619**	**2440**	**2.25**	**9.54**	**2830**	**3160**		**9640**	
		Sep-11		< 20.0	**582**			**8.20**	**2220**				

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Cyanide	Cations/Anions						Water Quality		
		Analyte:		Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:		ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:		200		250	1.6			600		1000	
		CGWSL Source:		EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**										
EP (continued)	OCD-8B	Apr-10			637	2040	0.803	8.18	1450 UB	2810	259	7940	< 0.500
		Apr-11			630	1660	0.651	9	1620	1960		6780	
TMD	MW-8	Apr-09			359	344	1.89	1.53	275	2570	296	4380	3.21
		Oct-09				425	2.02			2690	293	5350	12.2
		Apr-10			468 UB	326 UB	1.94	1.57	399 UB	2680	298	4760	5.69
		Oct-10			513 UB	472	3.41	2.11	422	2850		5140	16.3
		Apr-11			571	492	1.91	2.39	426	2040		4920	
		Sep-11			488	565	1.72	2.79	393	2510		5550	
	MW-16	Apr-09			528	502	2.12	8.10	434	2280	249	4740	0.577
		Apr-09	FD		549	521	2.15	8.80	442	1990	296	4830	0.579
		Sep-09			514	495	2.01	8.58	391	2350	262	4510	< 1.00
		Apr-10			481	418 UB	2.26	8.47	355 UB	2320	271	4500	< 0.500
		Apr-11			578	399	2.16	8.22	352	1870		4230	
		Apr-11	FD		561	447	2.12	8.42	358	1410		4190	
	MW-20	Apr-09			494	353	2.32	0.632	290	3120	277	5480	2.12
		Oct-09				301	2.46			3000	273	5710	1.50
		Apr-10			525	279 UB	2.51	< 1.00	301 UB	3170	269	5170	0.811
		Apr-11			541	278	2.4	< 1	294	2440		10200	
	MW-21	Apr-09			556	482	1.71	1.92	479	3150	301	5800	15.6
		Oct-09				475	1.62			2930	293	5950	16.8
		Apr-10			598	519 UB	1.88	1.96	503 UB	2800	259	5830	27.4
		Oct-10			514 UB	479	1.96	2.06	420	2500		5210	22.1
		Apr-11			580	608	1.74	2.12	481	2320		5020	
		Sep-11			497	589	1.60	2.84	391	2540		5700	
	MW-25	Apr-09			294	882	0.878	5.20	581	1240	157	3570	0.525
		Sep-09			279	825	1.10	3.46	535	1230	159	3560	< 1.00
		Apr-10			259 UB	748 UB	1.03	3.57	445 UB	1240 UB	178	3430	< 0.500
		Mar-11			276	531	1.09	3.68	487	821		3120	
	MW-26	Apr-09			566	734	1.74	4.38	502	3540	177	6720	< 0.500
		Sep-09			445	590	1.92	3.90	313	2860	179	5310	< 1.00
		Apr-10			449 UB	526 UB	1.83	4.43	332 UB	2920	205	5410	< 0.500
		Apr-11			548	431	1.75	4.06	334	2190		4460	
	MW-27	Apr-09			441	212	0.979	9.23	142	1430	201	2720	1.65
		Sep-09			379	201	1.18	9.54	135	1350	199	2710	2.60
		Apr-10			352 UB	166 UB	1.10	9.08	132 UB	1420	186	2610	1.16
		Apr-11			459	157	1.08	9.18	165	1120		2440	
	MW-68	Apr-09			239	186	1.80	3.81	142	1150	234	2290	3.32
		Sep-09			379	381	1.61	4.63	221	1380	281	3200	9.38
		Apr-10			275 UB	215 UB	1.87	4.12	180 UB	1200	307	2460	3.47
		Apr-11			282	202	1.96	3.35	120	785		2140	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Cyanide	Cations/Anions						Water Quality		
		Analyte:		Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:		ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:		200		250	1.6			600		1000	
		CGWSL Source:		EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**										
TMD (continued)	MW-71	Apr-10			**572**	**714 UB**	**1.50**	**3.37**	**406 UB**	**2680**	**259**	**5850**	**42.9**
		Oct-10		< 20.0	**669 UB**	**759**	**1.29**	**3.81**	**448**	**3190**		**5510**	**48.8**
		Apr-11		< 20	**452**	**798**	**1.34**	**2.77**	**352**	**2100**		**5370**	
		Apr-11	FD	< 20	**462**	**812**	**1.42**	**2.88**	**353**	**1880**		**5140**	
		Sep-11		< 20.0	**584**	**869**	**1.33**	**3.52**	**378**	**2390**		**5820**	
	MW-89	Apr-09			**536**	**419**	**2.31**	**8.33**	**188**	**3190**	**186**	**3040**	**0.550**
		Sep-09			**493**	**218**	**3.09**	**10.7**	**180**	**1630**	**199**	**3020**	< 1.00
		Apr-10	FD		**616**	**4310 J**	**0.840 J**	**22.7 J**	**2770 J**	**4640 J**	**278**	**10800 J**	< 0.500
		Apr-10			**470**	**240 UJ**	**3.14 J**	**9.92 J**	**168 UJ**	**1740 J**	< 5.00	**3320 J**	< 0.500
		Apr-11			**521**	**180**	**1.98**	**9.35**	**158**	**1270**		**2930**	
	NP-1	Apr-09											
		Sep-09											
		Apr-10				**689 UB**	**1.94**			**2970**	**365**	**6260**	**30.2**
		Oct-10											
		Apr-11			**603**	**571**	**1.9**	**6.54**	**412**	**2270**		**5210**	
		Sep-11											
	NP-6	Apr-09			**577**	**671**	**1.93**	**3.23**	**416**	**2640**	**313**	**5180**	**36.4**
		Oct-09				**780**	**2.22**			**2710**	**278**	**6660**	**41.9**
		Oct-10											
		Apr-11											
N Refinery	MW-23	Apr-09			**112**	**467**	**0.592**	**1.30**	**433**	**15.9**	**1140**	**2040**	< 0.150
		Sep-09			**73.1**	**555**	**1.06**	**1.24**	**454**	**29.7**	**1010**	**2270**	< 0.500
		Mar-10			**106**	**507**	**1.46**	**1.24**	**452**	**37.1**	**1120**	**2220**	< 0.500
		Oct-10			**89.2 UB**	**503**	**1.33**	**1.26**	**437**	**24.1**		**2040**	**0.255**
		Apr-11			**82.6**	**502**	**1.16**	< 1	**417**	**9.2**		**2020**	
		Sep-11			**71.3**	**464**	**0.926**	**1.11**	**400**	**1.44**		**2140**	
	MW-29	Apr-09			**440**	**398**	**1.97**	**3.18**	**415**	**1890**	**591**	**3900**	< 0.150
		Sep-09			**397**	**454**	**1.69**	**3.35**	**386**	**2140**	**670**	**4780**	< 1.00
		Mar-10			**371 UB**	**348 UB**	**2.23**	**5.40**	**335 UB**	**1760**	**637**	**3880**	< 0.500
		Oct-10			**388**	**332**	**2.47**	**4.66**	**346**	**1670**		**4010**	< 1.00
		Apr-11			**381**	**376**	**1.48**	**2.98**	**430**	**1740**		**3900**	
		Sep-11			**344**	**391**	**3.19**	**4.64**	**358**	**2300**		**4540**	
	MW-30	Mar-10			**473 UB**	**416 UB**	**1.02**	**1.53**	**323**	**1930**	**521**	**4160**	**0.891**
	MW-40	Mar-10			**294 UB**	**123 UB**	**1.45**	**0.963**	**86.3**	**912**	**516**	**2120**	< 0.500
		Apr-11			**284**	**164**	**1.46**	< 1	**111**	**1000**		**2200**	
		Apr-11	FD		**281**	**174**	**1.42**	< 1	**99.2**	**1040**		**2090**	
	MW-41	Apr-09			**316**	**995**	**0.522**	**0.870**	**680**	**1250**	**1090**	**4430**	**1.08**
		Sep-09			**248**	**736**	**0.546**	**0.502**	**504**	**1210**	**1040**	**4070**	< 1.00
		Mar-10			**234 UB**	**595 UB**	**0.667**	**0.486**	**450**	**1170**	**952**	**3590**	< 0.500
		Oct-10			**312**	**875**	**0.73**	< 1.00	**614**	**886**		**3750**	< 1.00
		Apr-11			**319**	**956**	**0.685**	< 1	**709**	**1270**		**4210**	
		Sep-11			**242**	**575**	**0.718**	< 1.00	**495**	**1100**		**3610**	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Cyanide	Cations/Anions						Water Quality		
		Analyte:		Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:		ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:		200		250	1.6			600		1000	
		CGWSL Source:		EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**										
N Refinery (continued)	MW-42	Apr-09			**203**	**693**	**0.502**	**0.682**	**392**	**991**	**875**	**3460**	< 0.150
		Apr-09	FD		**210**	**641**	**0.595**	**0.743**	**410**	**874**	**1120**	**3400**	**1.07**
		Sep-09			**237**	**750**	**0.605**	**0.462**	**425**	**979**	**1030**	**3680**	< 1.00
		Mar-10			**257 UB**	**278 UJ**	**0.655**	**0.469**	**453**	**359 UJ**	**1050**	**3380**	< 0.500
		Oct-10			**244**	**670**	**0.74**	< 1.00	**419**	**730**		**3420**	< 1.00
		Apr-11			**263**	**765**	**0.762**	< 1	**500**	**867**		**3370**	
	MW-43	Apr-09			**99.6**	**652**	**0.624**	**0.508**	**632**	**140**	**1120**	**2290**	< 0.150
		Sep-09			**133**	**626**	**0.690**	**0.561**	**584**	**128**	**972**	**2280**	< 0.500
		Mar-10			**104 UB**	**623**	**0.958**	**0.456**	**597**	**65.8**	**1220**	**2420**	< 0.500
		Oct-10		< 20.0	**87.3**	**610**	**0.93**	< 1.00	**627**	**39**		**2220**	< 1.00
		Apr-11		< 20 UJ	**139**	**598**	**0.772**	< 1	**626**	**94.3**		**2050**	
		Sep-11		< 20.0	**95.8**	**594**	**0.719**	< 1.00	**562**	**21.6**		**2390**	
	MW-45	Apr-09			**383**	**264**	**1.75**	**5.69**	**207**	**1690**	**304**	**3200**	< 0.500
		Sep-09			**445**	**343**	**2.00**	**4.59**	**228**	**1840**	**320**	**3850**	< 1.00
		Mar-10			**462 UB**	**353 UB**	**1.65**	**4.51**	**202**	**2060**	**436**	**4190**	< 0.500
		Nov-10		< 20.0	**487**	**377**	**1.96**	**4.54**	**212**	**1920**		**4290**	< 10.0
		Nov-10	FD	< 20.0	**540**	**368**	**1.82**	**5.15**	**235**	**1730**		**4020**	< 10.0
		Apr-11		< 20 UJ	**591**	**371**	**1.67**	**4.36**	**271**	**2160**		**4090**	
		Sep-11		< 20.0	**386**	**330**	**1.58**	**4.02**	**233**	**2070**		**4070**	
		Sep-11	FD	< 20.0	**391**	**328**	**1.54**	**4.06**	**237**	**2110**		**4070**	
	MW-46	Nov-10			**800**	**357**	**2.02**	**13.7**	**182**	**2050**		**4270**	< 10.0
	MW-46R	Apr-11			**485**	**417**	**1.65**	**1.87**	**228**	**2290**		**4250**	
		Sep-11			**403**	**346**	**1.43**	< 1.00	**184**	**2070**		**4250**	
	MW-55	Apr-09			**447**	**278**	**0.911**	**0.897**	**218**	**2140**	**313**	**4190**	**6.23**
		Sep-09			**476**	**277**	**1.15**	**0.934**	**241**	**2480**	**280**	**4850**	**6.58**
		Mar-10			**495 UB**	**243**	**1.71**	**0.764**	**193**	**2640**	**261**	**4760**	**10.8**
		Oct-10		< 20.0	**530**	**130**	**2.48**	**1.15**	**156**	**2400**		**4160**	**9.65**
		Apr-11		< 20	**518**	**248**	**1.82**	< 1	**238**	**3010**		**4920**	
		Sep-11		< 20.0	**370**	**312**	**1.64**	< 1.00	**216**	**2630**		**4950**	
	MW-56	Apr-09			**524**	**329**	**0.750**	**2.09**	**217**	**1920**	**432**	**3940**	**0.619**
		Sep-09			**504**	**337**	**0.854**	**1.99**	**190**	**1850**	**380**	**4030**	< 1.00
		Sep-09	FD		**496**	**338**	**0.853**	**1.94**	**185**	**1830**	**390**	**4100**	< 1.00
		Mar-10			**442 UB**	**306 UB**	**0.863**	**1.84**	**187 UB**	**1790**	**416**	**3890**	< 0.500
		Oct-10			**511**	**360**	**1.1**	**2.08**	**207**	**1800**		**3830**	< 1.00
		Apr-11			**488**	**350**	**1.07**	**1.98**	**235**	**2070**		**4060**	
		Apr-11	FD		**475**	**356**	**1.07**	**1.83**	**226**	**2100**		**3870**	
		Sep-11			**370**	**311**	**0.863**	**1.61**	**170**	**1890**		**4050**	
	MW-59	Apr-10			**494**	**228 UB**	**0.984**	**0.605**	**140**	**1750**	**382**	**3420**	< 0.500
		Apr-11			**420**	**197**	**1.2**	< 1	**149**	**1630**		**3110**	
	MW-60	Apr-10			**404 UB**	**316 UB**	**0.807**	**0.627**	**194**	**1750**	**704**	**3840**	< 0.500
		Nov-10		< 20.0	**383**	**289**	**0.381**	< 2.00	**193**	**1460**		**3380**	< 10.0
		Apr-11		< 20	**379**	**333**	**0.978**	< 1	**206**	**1840**		**3840**	
		Sep-11		< 20.0	**344**	**282**	**0.809**	< 1.00	**213**	**1690**		**3740**	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Cyanide	Cations/Anions						Water Quality		
		Analyte:		Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:		ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:		200		250	1.6			600		1000	
		CGWSL Source:		EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**										
N Refinery (continued)	MW-61	Apr-09			**438**	**1190**	**0.703**	**0.846**	**382**	**1010**	**653**	**4670**	< 0.500
		Oct-09				**1050**	**0.858**			**824**	**658**	**4320**	< 0.500
		Apr-10			**514**	**809 UB**	**1.08**	**0.628**	**575 UB**	**1440 UB**	**507**	**4440**	< 0.500 UJ
		Oct-10			**395**	**700**	**1.14**	< 1.00	**422**	**1220**		**3700**	**0.140 J**
		Apr-11			**378**	**736**	**0.871**	< 1	**446**	**1350**		**3780**	
		Sep-11			**340**	**691**	**0.881**	< 1.00	**412**	**1250**		**3580**	
	MW-62	Apr-09			**186**	**171**	**0.720**	**1.08**	**177**	**158**	**943**	**1600**	< 0.150
		Oct-09				**201**	**0.888**			**105**	**806**	**1600**	< 0.500
		Apr-10			**237 UB**	**228**	**1.10**	**0.891**	**172 UB**	**164**	**835**	**1570**	< 0.500
		Oct-10			**250**	**234**	**1.13**	**1.01**	**140 UB**	**211**		**1550**	**0.101**
		Oct-10	FD		**257**	**264**	**1.12**	**1.00**	**140 UB**	**217**		**1590**	< 0.100
		Apr-11			**236**	**232**	**0.876**	< 1	**141**	**198**		**1670**	
		Sep-11			**285**	**200**	**0.976**	< 1.00	**124**	**348**		**1890**	
	MW-67	Apr-09			**177**	**238**	< 0.250	**0.632**	**127**	**322**	**729**	**1590**	< 0.150
		Oct-09				**202**	< 0.500			**558**	**544**	**2030**	< 0.500
		Mar-10			**173 UB**	**243**	**0.432**	**0.602**	**134 UB**	**246**	**687**	**1520**	< 0.500
		Oct-10		< 20.0	**167**	**201**	**0.570**	< 1.00	**147**	**197**		**1350**	< 0.100
	MW-90	Apr-09			**283**	**114**	**1.31**	**1.69**	**311**	**1640**	**567**	**3770**	< 0.150
		Oct-09				**98.9**	**1.27**			**1500**	**603**	**3420**	< 0.500
		Mar-10			**245 UB**	**117 UB**	**1.31**	**1.10**	**220 UB**	**1430**	**612**	**2960**	< 0.500
		Oct-10			**288**	**111**	**1.56**	**1.37 UB**	**280**	**1330**		**2980**	< 0.10
		Apr-11			**274**	**119**	**1.04**	< 1	**185**	**1120**		**2510**	
		Sep-11			**256**	**138**	**0.850**	< 1.00	**142**	**995**		**2520**	
		Sep-11	FD		**216**	**150**	**0.968**	< 1.00	**143**	**1030**		**2530**	
	MW-91	Apr-09			**241**	**48.8**	**0.625**	**0.523**	**51.3**	**535**	**713**	**1820**	< 0.150
		Oct-09				**20.1**	**1.12**			**790**	**722**	**2250**	**0.562**
		Mar-10			**324 UB**	**13.4 UB**	**1.24**	**0.332**	**33.3**	**664**	**787**	**2040**	< 0.500
		Oct-10			**323**	**17.9**	**1.39**	< 1.00	**39.2 UB**	**581**		**1890**	**0.11**
		Apr-11			**304**	**19.4**	**1.19**	< 1	**39.7**	**517**		**1760**	
		Sep-11			**151**	**18.8**	**1.04**	< 1.00	**30.7**	**145**		**1120**	
	MW-92	Apr-09			**172**	**401**	**0.549**	**0.590**	**325**	**310**	**970**	**2280**	< 0.150
		Oct-09				**603**	**0.871**			**40.0**	**1100**	**2260**	< 0.100
		Mar-10			**119 UB**	**488**	**0.997**	**1.11**	**377 UB**	**64.8**	**1150**	**2190**	< 0.500
	MW-93	Apr-09			**329**	**60.1**	**1.26**	**4.55**	**90.3**	**817**	**529**	**2000**	< 0.500
		Oct-09				**46.7**	**1.32**			**709**	**480**	**1920**	< 0.500
		Mar-10			**378 UB**	**47.9 J**	**1.64 J**	**2.28 J**	**81.8 J**	**847 J**	**642**	**2180 J**	< 0.500
		Mar-10	FD		**451 UB**	**572 J**	**2.41 J**	**5.11 J**	**379 UJ**	**3350 J**	**531**	**6530 J**	< 0.500
		Oct-10			**355**	**42.3**	**1.55**	**2.46 UB**	**88.8**	**686**		**1740**	**0.14 J**
		Apr-11			**281**	**36.3**	**1.35**	**1.7**	**81.7**	**379**		**1600**	
		Sep-11			**295**	**36.5**	**1.16**	**2.36**	**80.0**	**526**		**1780**	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Cyanide	Cations/Anions						Water Quality		
		Analyte:		Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:		ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:		200		250	1.6			600		1000	
		CGWSL Source:		EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**										
N Refinery (continued)	MW-95	Apr-09			**240**	**261**	< 0.500	**0.446**	**112**	**477**	**669**	**1980**	< 0.150
		Oct-09				**235**	**0.657**			**488**	**643**	**2060**	< 0.500
		Mar-10			**219 UB**	**263**	**0.631**	**0.559**	**142 UB**	**302**	**697**	**1760**	< 0.500
		Apr-11			**209**	**269**	**0.558**	< 1	**138**	**194**		**1710**	
	MW-96	Apr-09			**164**	**248**	**0.667**	**0.829**	**214**	**308**	**839**	**1880**	< 0.150
		Apr-09	FD		**166**	**242**	**0.630**	**0.780**	**214**	**337**	**854**	**1830**	< 0.150
		Oct-09				**222**	**1.04**			**243**	**757**	**1790**	**0.633**
		Oct-09	FD			**220**	**0.791**			**242**	**801**	**1710**	< 0.500
		Mar-10			**178 UB**	**149 UB**	**0.951**	**1.01**	**225 UB**	**422**	**827**	**1900**	< 0.500
		Oct-10			**187**	**133**	**1.18**	**1.14 UB**	**236**	**359**		**1730**	**0.24**
		Apr-11			**189**	**138**	**0.902**	< 1	**228**	**353**		**1710**	
		Sep-11			**132**	**145**	**0.651**	< 1.00	**186**	**239**		**1700**	
	MW-98	Apr-09			**294**	**18.3**	**0.730**	< 0.400	**72.9**	**1610**	**320**	**2860**	< 0.150
		Sep-09			**419**	**55.4**	**1.64**	**0.214**	**77.0**	**2040**	**518**	**3810**	< 0.500
		Apr-10			**509**	**59.1**	**1.64**	< 0.400	**90.5 UB**	**1950**	**567**	**3760**	< 0.500
		Oct-10			**397**	**54.8**	**1.43**	< 1.00	**70.3 UB**	**1540**		**3160**	< 0.100
		Apr-11			**381**	**89.4**	**1.59**	< 1	**77.4**	**1940**		**3550**	
		Sep-11			**343**	**97.6**	**1.51**	< 1.00	**65.8**	**1790**		**3700**	
	RW-1	Apr-09			**300**	**312**	**0.573**	**1.84**	**290**	**736**	**820**	**2670**	< 0.150
		Oct-09				**324**	**0.597**			**671**	**742**	**2510**	< 0.500
		Nov-10			**470**	**296**	**0.755**	**3.71**	**275**	**905**		**3270**	< 10.0
	RW-2	Nov-10			**243**	**271**	**0.966**	**2.07**	**245**	**34.3**		**2100**	< 10.0
	RW-7	Apr-10			**164**	**280**	**0.709**	**0.893**	**131**	**164**	**814**	**1600**	< 0.500
	RW-9	Apr-10			**240 UB**	**296 UB**	**1.22**	**2.18**	**361**	**878**	**784**	**2510**	< 0.500
		Apr-10	FD		**193 UB**	**251 UB**	**1.33**	**2.19**	**288**	**750**	**694**	**2470**	< 0.500
		Apr-11											
		Apr-11			**303**	**397**	**1.22**	**1.95**	**388**	**521**		**2490**	
	RW-10	Apr-10			**293 UB**	**183 UB**	**2.74**	**5.98**	**200**	**1430**	**201**	**2890**	< 0.500
		Apr-11			**367**	**192**	**2.44**	**5.91**	**251**	**1640**		**2910**	
		Apr-11	FD		**345**	**194**	**2.41**	**5.72**	**244**	**1670**		**2930**	
	RW-16A	Mar-10			**483 UB**	**535**	**4.92**	**1.27**	**508**	**3000**	**526**	**6410**	**1.46**
S Refinery	KWB-2R	Oct-10			**113**	**363**	**1.73**	< 2.00	**292**	**13.2**		**1580**	< 0.100 UJ
		Apr-11			**302**	**222**	**0.623**	< 1	**337**	**687**		**2810**	
	MW-28	Apr-09			**251**	**179**	**0.919**	**0.484**	**99.8**	**567**	**858**	**2090**	< 0.150
		Sep-09			**228**	**182**	**1.10**	**0.380**	**102**	**460**	**760**	**1830**	< 1.00
		Apr-10			**255 UB**	**182 UB**	**1.01**	**0.716**	**112**	**614**	**764**	**2150**	< 0.500
		Oct-10		**45.0**	**292**	**230 J**	**1.1 J**	**1.20 J**	**86.4 UB**	**740**		**2560 J**	< 1.00
		Apr-11		< 20	**262**	**185**	**1.01**	**2.32**	**108**	**902**		**2390**	
		Sep-11		< 20.0	**247**	**167**	**0.800**	**2.07**	**88.0**	**789**		**2420**	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

				Analyte Group:	Cyanide	Cations/Anions						Water Quality		
				Analyte:	Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
				Units:	ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
				CGWSL:	200		250	1.6			600		1000	
				CGWSL Source:	EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**											
S Refinery (continued)	MW-49	Apr-09				**216**	**541**	**0.977**	**2.12**	**298**	**358**	**703**	**2310**	**1.07**
		Apr-10				**184 UB**	**464**	**1.24**	**2.55**	**278**	**329**	**754**	**2170**	< 0.500
		Oct-10		< 20.0		**166**	**416**	**1.36**	**2.17**	**260**	**288**		**1940**	< 0.100
		Apr-11		< 20		**186**	**416**	**1.26**	**2.29**	**317**	**380**		**2060**	
		Sep-11		< 20.0		**152**	**360**	**1.08**	**2.10**	**253**	**305**		**2030**	
		Sep-11	FD	< 20.0		**148**	**342**	**1.15**	**2.01**	**250**	**280**		**1990**	
	MW-50	Apr-09				**374**	**170**	**0.583**	**2.11**	**116**	**1290**	**304**	**2700**	< 0.500
		Sep-09				**373**	**167**	**0.863**	**2.37**	**114**	**1310**	**311**	**2690**	**0.565**
		Sep-09	FD			**408**	**167**	**0.723**	**2.47**	**121**	**1280**	**316**	**2730**	< 0.500
		Apr-10				**489**	**170 UB**	**0.828**	**2.19**	**159 UB**	**1420 UB**	**338**	**2750**	< 0.500
		Nov-10				**337**	**156**	**0.840**	**2.23**	**112**	**1230**		**2510**	< 10.0
		Apr-11				**339**	**155**	**0.879**	**2.29**	**123**	**1450**		**2540**	
		Sep-11				**329**	**141**	**0.570**	**1.82**	**102**	**1340**		**2570**	
	MW-52	Apr-09				**190**	**261**	**1.40**	< 0.400	**342**	**1060**	**616**	**2600**	**2.24**
		Sep-09				**165**	**180**	**1.42**	**0.328**	**314**	**1030**	**552**	**2330**	**2.18**
		Sep-09	FD			**191**	**181**	**1.71**	**0.316**	**361**	**1020**	**538**	**2500**	**2.11**
		Apr-10				**215 UB**	**221 UB**	**1.67**	< 1.00	**366 UB**	**1080**	**517**	**2750**	**3.08**
		Oct-10		< 20.0		**160**	**159**	**1.76**	< 2.00	**284**	**849**		**2220**	**1.15**
		Apr-11		< 20		**191**	**228**	**1.76**	< 1	**337**	**997**		**2410**	
		Sep-11		< 20.0		**160**	**173**	**1.39**	< 1.00	**305**	**973**		**2140**	
		Sep-11	FD	< 20.0		**153**	**179**	**1.43**	< 1.00	**284**	**982**		**2140**	
	MW-57	Nov-10				**679**	**1380**	**2.78**	**3.02**	**924**	**3410**		**8720**	< 10.0
		Apr-11				**438**	**549**	**1.67**	< 1	**468**	**1310**		**4440**	
		Sep-11				**636**	**636**	**3.58**	**2.57**	**916**	**4750**		**3580**	
	MW-58	Apr-09				**214**	**327**	**0.701**	< 0.20	**102**	**209**	**770**	**1610**	< 0.150
		Sep-09				**222**	**317**	**1.11**	**0.281**	**105**	**95.9**	**794**	**1500**	< 0.500
		Apr-10				**210 UB**	**303**	**0.933**	< 1.00	**84.2 UB**	**157 J**	**756**	**1710**	< 0.500
		Apr-10	FD			**195 UB**	**260**	**0.998**	< 1.00	**83.0 UB**	**90.9 J**	**776**	**1510**	< 0.500
		Oct-10		< 20.0		**217**	**282**	**0.977**	< 2.00	**80.3**	< 0.500		**1300**	< 0.100
		Apr-11		< 20		**243**	**248**	**0.813**	< 1	**128**	**96.1**		**1730**	
		Sep-11		< 20.0		**218**	**343**	**0.724**	< 1.00	**120**	**177**		**1630**	
	MW-66	Apr-09				**153**	**238**	**0.901**	**1.09**	**191**	**6.21**	**883**	**1230**	< 0.150
		Sep-09				**136**	**231**	**1.05**	**0.740**	**177**	**6.96**	**750**	**1230**	< 0.100
		Apr-10				**142 UB**	**216**	**1.04**	**0.920**	**180**	**3.59 UB**	**864**	**1340**	< 0.500
		Oct-10		< 20.0		**119**	**200**	**1.2**	**1.80**	**149 UB**	**1.1**		**1010**	< 1.00
		Apr-11		< 20		**137**	**252**	**1.19**	< 1	**192**	**2.82**		**1220**	
		Apr-11	FD	< 20		**142**	**231**	**1.1**	< 1	**189**	**2.37**		**1250**	
		Sep-11		< 20.0		**116**	**192**	**0.625**	**1.20**	**150**	**12.5**		**966**	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

				Analyte Group:	Cyanide	Cations/Anions						Water Quality		
				Analyte:	Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
				Units:	ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
				CGWSL:	200		250	1.6			600		1000	
				CGWSL Source:	EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**											
S Refinery (continued)	MW-99	Apr-09				**177**	**248**	< 0.500	**0.594**	**133**	**218**	**616**	**1390**	< 0.150
		Sep-09				**190**	**249**	< 0.500	**0.570**	**206**	**205**	**774**	**1680**	< 0.500
		Apr-10				**183 UB**	**268**	**0.534**	**0.632**	**200**	**236**	**804**	**1790**	< 0.500
		Oct-10				**187**	**290**	**0.58**	< 1.00	**192**	**200**		**1510**	< 1.00
		Apr-11				**189**	**286**	**0.578**	< 1	**221**	**262**		**1570**	
		Sep-11				**159**	**262**	**0.550**	< 1.00	**205**	**139**		**1430**	
	MW-101	Apr-09				**171**	**289**	< 0.500	**0.581**	**180**	**229**	**718**	**1680**	< 0.150
		Sep-09				**196**	**241**	**0.847**	**0.614**	**147**	**212**	**617**	**1440**	< 0.500
		Apr-10				**186 UB**	**244**	**0.658**	**0.649**	**154**	**195**	**663**	**1430**	< 0.500
		Nov-10				**172**	**271**	**0.734**	< 1.00	**139**	**187**		**1320**	< 10.0
		Apr-11				**202**	**246**	**0.67**	< 1	**151**	**127**		**1420**	
		Sep-11				**175**	**233**	**0.697**	< 1.00	**141**	**175**		**1390**	
	MW-103	Mar-09				**12.1**	**919**	**12.0**	**1.15**	**1050**	**42.5**	**1020**	**2710**	< 1.00
		Sep-09				**13.4**	**819**	**11.7**	**0.920**	**1010**	**39.8**	**1060**	**2700**	< 0.500
		Apr-10				**12.3**	**817**	**12.4**	**0.729**	**974**	**12.1 UJ**	**1380**	**3070**	< 0.500
		Apr-11				**12.6**	**726**	**10.1**	< 1	**1180**	**25.6**		**2770**	
	MW-104	Mar-09				**208**	**64.8**	**2.91**	**5.01**	**38.3**	**620**	**139**	**1180**	< 1.00
		Sep-09				**291**	**74.1**	**2.33**	**6.69**	**61.4**	**730**	**202**	**1560**	< 0.500
		Apr-10				**151**	**26.9**	**2.53**	**4.55**	**31.9**	**436**	**148**	**874**	< 0.500
		Oct-10				**264**	**87**	**2.0 J**	**7.07**	**46.5 UB**	**620**		**1500**	< 1.00
		Oct-10	FD			**262**	**96.6 J**	**2.03 J**	**7.25 J**	**48.5 UB**	**691**		**1500 J**	< 1.00
		Apr-11				**296**	**60.3**	**1.68**	**7.38**	**66.6**	**938**		**1660**	
		Sep-11				**336**	**81.5**	**2.31**	**7.18**	**66.0**	**1320**		**2130**	
		Sep-11	FD			**348**	**82.5**	**2.35**	**7.50**	**66.8**	**1320**		**2120**	
	MW-106	Sep-09				**416**	**83.2**	**0.989**	**2.46**	**194**	**1880**	**508**	**3680**	**0.507**
		Apr-10				**366 UB**	**36.6**	**0.919**	**1.70**	**146**	**1640**	**452**	**3270**	< 0.500
		Oct-10				**365**	**54.3**	**0.956**	< 1.00	**196**	**1460**		**3400**	< 10.0
		Apr-11				**400**	**51.1**	**0.968**	< 1	**185**	**1650**		**3210**	
		Sep-11				**350**	**67.2**	**0.955**	**1.08**	**159**	**1630**		**3350**	
	MW-107	Sep-09				**161**	**306**	**0.918**	**1.77**	**68.7**	< 2.50	**730**	**1570**	< 0.500
		Mar-10				**128**	**253**	**1.23**	**0.989**	**61.9**	**0.813**	**727**	**1270**	< 0.500
		Nov-10				**111**	**272**	**1.20**	**1.15**	**61.2**	**1.03**		**1160**	< 1.00
		Apr-11				**122**	**281**	**1.41**	< 1	**63.2**	**1.21**		**1160**	
		Sep-11				**135**	**279**	**1.36**	< 1.00	**63.3**	**1.66**		**1190**	
	MW-109	Jan-11												
		Jan-11	FD											
		Apr-11				**229**	**596**	**1.26**	< 1	**540**	**312**		**1860**	
		Sep-11				**86.7**	**540**	**1.07**	< 1.00	**516**	**244**		**2070**	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:		Cyanide	Cations/Anions						Water Quality		
		Analyte:		Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:		ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:		200		250	1.6			600		1000	
		CGWSL Source:		EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**										
S Refinery (continued)	MW-110	Jan-11											
		Apr-11			**210**	**198**	**1.29**	**1.11**	**293**	**249**		**1410**	
		Sep-11			**118**	**179**	**0.990**	< 1.00	**291**	**498**		**1580**	
	RW-4	Apr-10			**178**	**297**	**0.667**	**1.41**	**171**	**404**	**613**	**1780**	< 0.500
		Apr-11			**194**	**343**	**0.602**	**1.58**	**198**	**386**		**1820**	
	RA-313	Oct-09				**15.2**	**0.711**			**429**	**184**	**976**	**1.14**
		Apr-10			**207 UB**	**33.6**	**0.698**	**0.965**	**21.3 UB**	**494**	**199**	**1100**	< 0.500
		Apr-10	FD		**215 UB**	**34.3**	**0.698**	**1.11**	**22.8 UB**	**496**	**189**	**1030**	**0.992**
		Apr-11			**174**	**29.2**	**0.722**	**0.989**	**19.7**	**436**		**932**	
	RA-1227	Nov-10				**135**	**0.373**			**1340**		**2880**	< 10.0
		Nov-10	FD			**140**	**0.344**			**1340**		**2520**	< 10.0
		Apr-11			**370**	**130**	**0.318**	**1.81**	**115**	**1480**		**2800**	
Field E of Refinery	KWB-1A	Apr-09			**385**	**210**	**0.784**	**1.02**	**170**	**1890**	**365**	**3610**	< 0.500
		Sep-09			**382**	**198**	**0.955**	**0.969**	**168**	**1850**	**409**	**3570**	**0.709**
		Apr-10			**355 UB**	**223 UB**	**1.11**	**1.07**	**149 UB**	**1950**	**421**	**3840**	< 0.500
		Oct-10		< 20.0	**409 UB**	**220**	**1.15**	**0.996**	**155**	**1490 J**		**3150**	< 0.100
		Oct-10	FD	< 20.0	**434 UB**	**248**	**1.18**	**1.07**	**170**	**1660**		**3730**	< 0.100
		Apr-11		< 20	**519**	**301**	**1.09**	**1.46**	**175**	**1580**		**3840**	
		Sep-11		< 20.0	**351**	**314**	**1.19**	< 1.00	**136**	**2080**		**3960**	
	KWB-3AR	Apr-09			**601**	**176**	< 0.250	**1.05**	**329**	**2780**	**379**	**5270**	**12.1**
		Apr-10			**615**	**292 UB**	**0.284**	**0.938**	**467 UB**	**3200**	**373**	**5340**	**18.0**
		Oct-10		< 20.0	**532**	**216**	**0.511**	< 2.00	**428**	**2810**		**5230**	**8.78**
		Oct-10	FD	< 20.0	**502**	**237 J**	**0.501**	< 2.00	**434 J**	**2720**		**4870**	**9.14 J**
		Apr-11		< 20	**635**	**158**	**0.469**	< 1	**442**	**2360**		**2340**	
	KWB-7	Apr-09			**313**	**474**	< 0.500	**1.25**	**229**	**860**	**630**	**2940**	**5.74**
		Oct-09				**517**	**0.789**			**1010**	**686**	**3130**	**7.15**
		Apr-10			**273 UB**	**419 UB**	**0.771**	**0.558**	**228 UB**	**895 UB**	**769**	**2820**	**1.27**
		Oct-10		< 20.0	**323**	**468**	**0.870**	< 2.00	**230**	**830**		**2940**	**0.518**
		Apr-11		< 20	**311**	**406**	**0.75**	< 2	**185**	**995**		**2830**	
		Sep-11		< 20.0	**352**	**486**	**0.627**	**1.12**	**254**	**957**		**3040**	
	KWB-9	Apr-09			**433**	**205**	< 0.250	**0.812**	**141**	**1370**	**482**	**2990**	**0.564**
		Sep-09			**408**	**242**	< 0.500	**0.791**	**137**	**1450**	**424**	**3070**	**1.17**
		Apr-10			**532**	**269 UB**	**0.198**	< 1.00	**180 UB**	**1570**	**438**	**3540**	**1.65**
		Oct-10		< 20.0	**473**	**259**	**0.358**	< 2.00	**151**	**1510**		**3140**	**0.508**
		Apr-11		< 20	**524**	**178**	**0.349**	< 1	**179**	**1350**		**3570**	
	KWB-11A	Apr-09			**389**	**864**	< 0.500	**1.67**	**269**	**814**	**466**	**3510**	**30.1**
		Oct-09				**890**	**0.840**			**954**	**477**	**3940**	**33.7**
		Apr-10			**404 UB**	**909**	**0.633**	< 1.00	**319 UB**	**879 UB**	**555**	**3740**	**27.4**
		Oct-10		< 20.0	**541 UB**	**960**	**1.01**	**0.603**	**364**	**903**		**4020**	**26.9**
		Apr-11		< 20	**443**	**757**	**0.78**	< 1	**310**	**678**		**3420**	
		Sep-11		< 20.0	**426**	**903**	**0.925**	< 1.00	**280**	**933**		**3810**	
		Sep-11	FD	< 20.0	**441**	**910**	**0.640**	**1.26**	**288**	**924**		**3780**	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

		Analyte Group:	Cyanide	Cations/Anions						Water Quality		
		Analyte:	Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
		Units:	ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
		CGWSL:	200		250	1.6			600		1000	
		CGWSL Source:	EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**									
Field E of Refinery (continued)	KWB-11B	Oct-10		< 20.0	409	288	0.483	3.11	81.5	1180		2690	1.26
		Apr-11		< 20	456	352	0.366	2.93	90.9	1300		2750	
		Sep-11		< 20.0	276	280	0.292	2.83	68.6	1140		2680	
	KWB-12A	Sep-09			500	130	< 0.500	0.716	138	2290	281	4010	5.47
		Oct-10		< 20.0	541	126	0.447 J	< 2.00	134	2200		3740	5.61 J
		Sep-11		< 20.0	566	129	0.225	0.794	154	2290		9810	
	KWB-12B	Oct-10		< 20.0	538	116 J	0.305	< 2.00	140 J	2090		3760	4.42 J
		Apr-11		< 20	638	72.2	1.15	< 1	175	1700		4170	
		Sep-11		< 20.0	512	113	< 0.200	0.544	127	2280		3780	
		Sep-11	FD	< 20.0	552	112	< 0.200	0.550	136	2200		3850	
	RW-11-1	Nov-10			398	189	0.605	6.06	73.0	766		2660	< 10.0
	RW-18	Apr-09			509	321	1.98	0.864	231	3140	255	5520	1.07
		Sep-09			522	309	1.93	1.19	214	2920	296		1.53
		Apr-10			413 UB	362 UB	2.30	0.950	188 UB	3190	311	5480	0.822
	RA-4196	Apr-09			377	875	< 0.250	2.89	419	1230	157	3370	< 0.150
		Sep-09			425	329	< 0.500	2.39	158	1280	197	2770	< 0.500
		Apr-10			412 UB	187 UB	0.115	2.36	121 UB	1120	213	2400	< 0.500
		Nov-10				201	0.274			1150		2440	< 10.0
		Apr-11			291	173	0.301	2.2	113	1010		2050	
		Apr-11	FD		300	198	0.311	2.08	106	1080		2250	
		Sep-11			307	136	< 0.200	1.95	75.4	1200		2200	
		Sep-11	FD		307	132	< 0.200	1.88	73.9	1210		2220	
	RA-4798	Apr-09			238	70.0	< 0.250	2.02	44.7	768	128	1460	< 0.500
		Sep-09			457	165	< 0.500	2.34	127	1560	286	3000	0.758
		Apr-10			283 UB	73.0	0.154	1.74	47.8 UB	842	179	1740	1.20
		Nov-10				139	0.251			1210		2460	< 10.0
		Apr-11			210	67.1	0.293	1.83	44.2	726		1460	
		Sep-11			259	73.8	< 0.200	1.75	50.1	835		1870	
Crossgradient	KWB-13	Apr-09			496	181	< 0.500	1.02	154	1760	255	3270	13.0
		Apr-09	FD		505	181	< 0.500	1.25	124	1760	282	3370	13.8
		Sep-09			491	157	0.501	0.934	147	1710	286	3500	14.4
		Apr-10			431 UB	158 UB	0.582	1.40	139 UB	1900	294	3540	14.5
		Apr-11		< 20	608	147	0.619	2.24	198	1630		3320	
	NP-5	Apr-09			527	171	2.62	0.441	516	4470	289	6930	< 0.150
		Oct-09				164	2.70			3980	258	6690	5.75
		Apr-10			521	216 UB	2.77	< 1.00	452 UB	3860	249	6050	6.39
		Apr-11			500	273	2.79	< 1	352	3010		5350	
	RA-3156	Apr-09			454	218	< 0.250	2.54	140	1490	231	2880	5.28
		Apr-10			555	209 UB	< 0.100	2.32	171 UB	1570	239	3070	5.12
		Nov-10				215	0.235			1460		3120	< 10.0
		Apr-11			409	207	0.224	2.13	154	1510		2840	
		Sep-11			428	242	< 0.200	2.35	136	1730		3260	

Table 4 - Summary of Groundwater Analytical Data

2011 Groundwater Report

Navajo Refinery, Artesia, New Mexico

				Analyte Group:	Cyanide	Cations/Anions						Water Quality		
				Analyte:	Cyanide	Calcium	Chloride	Fluoride	Potassium	Sodium	Sulfate	Alkalinity, Total	Total Dissolved Solids	Nitrogen
				Units:	ug/l	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/l	mg/l
				CGWSL:	200		250	1.6			600		1000	
				CGWSL Source:	EPA MCL		WQCC Dom	WQCC HH			WQCC Dom		WQCC Dom	
Area	**Location**	**Date**	**Dup**											
Upgradient	MW-53	Apr-09				**330**	**119**	**0.848**	**1.07**	**98.1**	**1250**	**265**	**2370**	**0.507**
		Oct-09					**135**	**0.990**			**1290**	**223**	**2460**	**2.27**
		Apr-10				**290 UB**	**109 UB**	**0.870**	< 1.00	**85.8 UB**	**1330**	**239**	**2390 J**	< 0.500
		Apr-10	FD			**350 UB**	**108 UB**	**0.851**	< 1.00	**106 UB**	**1310**	**199**	**902 J**	< 0.500
		Apr-11				**332**	**146**	**0.573**	**1.1**	**116**	**875**		**1920**	
	UG-1	Apr-09				**907**	**177**	< 0.500	**7.06**	**70.5**	**1900**	**1330**	**3410**	**5.54**
		Oct-09					**166**	**0.691**			**1810**	**252**	**3450**	**7.21**
		Apr-10				**530 UB**	**159 UB**	**0.627**	**1.69**	**87.6 UB**	**1820**	**219**	**3410**	**7.36**
		Oct-10			< 20.0	**494**	**151**	**0.680**	< 2.00	**78.8**	**1590**		**3060**	**6.61**
		Mar-11			< 20	**487**	**108**	**0.712**	**2.38**	**91.8**	**1300**		**3260**	
	UG-2	Apr-09				**374**	**62.1**	**1.25**	**4.61**	**75.9**	**1010**	**120**	**1940**	**1.70**
		Oct-09					**53.0**	**1.30**			**961**	**247**	**1900**	**2.56**
		Apr-10				**267 UB**	**44.0**	**1.34**	**3.05**	**71.0 UB**	**910**	**249**	**1900**	**2.44**
		Oct-10			< 20.0	**263**	**45.4**	**1.34 J**	**2.46**	**71.1**	**809**		**1740**	**1.90**
		Mar-11			< 20	**270**	**42**	**1.32**	**2.83**	**82.1**	**689**		**1690**	
	UG-3R	Apr-09				**434**	**62.9**	< 0.250	**4.06**	**63.3**	**1390**	**379**	**2590**	**4.96**
		Oct-09					**68.0**	**0.565**			**1330**	**208**	**2520**	**5.38**
		Apr-10				**464**	**59.6**	**0.372**	**2.10**	**79.4 UB**	**1360**	**209**	**2470**	**6.28**
		Oct-10			< 20.0	**359**	**46**	**0.50 J**	**1.82**	**49.3 UB**	**1100**		**2170**	**1.97**
		Mar-11			< 20	**335**	**26.8**	**0.492**	**2.4**	**55.6**	**834**		**1830**	
		Mar-11	FD		< 20	**330**	**26.8**	**0.486**	**2.08**	**53.2**	**765**		**1860**	

Table 4 - Summary of Groundwater Analytical Data
2011 Groundwater Report
Navajo Refinery, Artesia, New Mexico

Abbreviation	Definition
X	Reported concentration equal to X was above the CGWSL.
X	Analyte was detected above the reporting limit at a concentration equal to X.
< x	Analyte was not detected at reporting limit equal to x. If the < x value is bolded, the reporting limit exceeded the CGWSL.
CGWSL	Critical Groundwater Screening Level (see Table 3)
CGWSL Source	Source for CGWSL value (see Table 3)
DCE	Dichloroethene
Dup	Duplicate sample indicator
EPA MCL	EPA Maximum Contaminant Level from "Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites"
FD	Field Duplicate sample
mg/L	milligrams per liter
MTBE	Methyl-Tert-Butylether
NMED TPH	New Mexico Environment Department Risk Assessment Guidance for Site Investigations and Remediation, February 2012, TPH Screening Guidelines for Potable Groundwater
NMED TW	New Mexico Environment Department Risk Assessment Guidance for Site Investigations and Remediation, February 2012, Tap Water Screening Level
ug/L	micrograms per liter
WQCC Dom	NMED Groundwater standard for domestic exposure taken from 20.6.2.3103.B
WQCC HH	NMED Groundwater standard for human health exposure taken from 20.6.2.3103.A
WQCC Irr	NMED Groundwater standard for irrigation exposure taken from 20.6.2.3103.C

Lab Footnote	Definition
B	Analyte was also detected in the associated method blank.
J	Indicates an estimated value.
R	Rejected.
U	The compound was analyzed for but not detected at the reporting limit shown.
UJ	The compound was not detected at the reporting limit shown but the reporting limit is an estimated value.

Table 5
RO System Reject Water Analytical Data
Navajo Refinery, Artesia, New Mexico

		Metals																				
		Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Vanadium	Zinc
	Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	CGWSL:	5	0.01	1	0.004	0.75	0.005	--	0.05	0.05	1	1	0.05	-	0.2	1	0.2	-	0.05	0.05	-	0.18	10
	Source:	WQCC	MCL	WQCC	MCL	WQCC	MCL		WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC		WQCC	WQCC		EPA	WQCC
	Date																						
Reverse Osmosis Reject Water	12/27/2004	<0.01	0.00725	0.0669	<0.002	0.071	<0.002	628	<0.005	<0.005	0.00586	<0.2	<0.005	198	<0.005	0.00793	<0.005	4.11	0.01	<0.005	131	0.0104	0.0259
	1/16/2007	<0.01	<0.005	0.0638	<0.002	0.0568	<0.002	694	<0.005	<0.005	<0.005	<0.2	<0.005	233	<0.005	0.00744	<0.005	4.48	0.0095	<0.005	234	0.00991	0.00839
	2/22/2007	<0.01	0.00941	0.0681	<0.002	0.0643	<0.002	735	<0.005	<0.005	<0.005	<0.2	<0.005	246	<0.005	0.00813	<0.005	4.49	0.00761	<0.005	320	0.0102	0.00734
	7/5/2007	0.0168	<0.005	0.0553	<0.002	0.0644	<0.002	600	<0.005	<0.005	<0.005	<0.2	<0.005	176	<0.005	0.00882	<0.005	3.47	0.00763	<0.005	167	0.00974	0.00749
	12/14/2007	<0.01	<0.005	0.0704	<0.002	0.0752	<0.002	594	<0.005	<0.005	<0.005	<0.2	<0.005	208	<0.005	0.00952	<0.005	4.32	0.00793	<0.005	218	0.0104	0.00677
	2/7/2008	<0.01	<0.005	0.0564	<0.002	0.0773	<0.002	548	<0.005	<0.005	<0.005	<0.2	<0.005	179	<0.005	0.00639	<0.005	3.34	0.0058	<0.005	206	0.00771	<0.005
	5/22/2008	<0.01	<0.005	0.0602	<0.002	0.0819	<0.002	562	<0.005	<0.005	<0.005	<0.2	<0.005	180	<0.005	0.0073	<0.005	3.72	0.00877	<0.005	167	0.0116	0.00694
	8/29/2008	<0.01	<0.005	0.0783	<0.002	0.0896	<0.002	786	<0.005	<0.005	<0.005	<0.2	<0.005	247	<0.005	0.0108	<0.005	4.68	0.00658	<0.005	152	0.0106	0.00657
	12/4/2008	NA	<0.005	0.0759	NA	NA	<0.002	NA	<0.005	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	0.00942	<0.005	NA	NA	NA
	2/23/2009	<0.01	<0.005	0.0611	<0.002	0.0786	<0.002	698	<0.005	<0.005	<0.005	<0.2	<0.005	215	<0.005	0.00976	<0.005	4.14	0.00893	<0.005	192	0.0107	<0.005
	5/7/2009	<0.05	<0.025	0.074	<0.01	<0.1	<0.01	596	<0.025	<0.025	<0.025	<1	<0.025	198	<0.025	<0.025	<0.025	4	<0.025	<0.025	224	<0.025	<0.025
	8/25/2009	NA	<0.005	0.0751	NA	NA	<0.002	NA	<0.005	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	0.0082	<0.005	NA	NA	NA
	11/9/2009	NA	<0.005	0.0816	<0.002	<0.005	<0.002	NA	<0.005	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	0.00702	<0.005	NA	NA	NA
	2/25/2010	NA	<0.005	0.0644	NA	NA	<0.002	NA	<0.005	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	0.00668	<0.005	NA	NA	NA
	5/27/2010	NA	<0.005	0.0529	NA	NA	<0.002	602	<0.005	NA	NA	NA	<0.005	144	NA	NA	NA	3.22	0.00627	<0.005	115	NA	NA
	8/12/2010	NA	<0.005	0.0819	NA	NA	<0.004	651	<0.005	NA	NA	NA	<0.010	186	NA	NA	NA	4.72	0.0106	<0.005	164	NA	NA
	11/23/2010	NA	<0.025	0.344	NA	NA	<0.01	NA	<0.025	NA	NA	NA	<0.025	NA	NA	NA	NA	NA	0.0347	<0.025	NA	NA	NA
	2/23/2011	NA	NA	0.0583	NA	0.0629	NA	620	NA	NA	NA	NA	NA	166	NA	0.00757	NA	3.51	0.00551	NA	163	0.00869	NA
	5/24/2011	NA	NA	0.0681	NA	0.0675	NA	622	NA	NA	0.0229	NA	NA	171	NA	0.0127	NA	3.93	0.012	NA	108	0.0114	0.0167
	8/23/2011	0.0226	NA	0.0633	NA	0.0835	NA	604	NA	NA	NA	NA	NA	172	NA	0.0103	NA	3.59	NA	NA	49.8	0.0103	NA
	11/16/2011	NA	0.0124	0.0445	NA	NA	NA	520	NA	NA	NA	NA	NA	136	NA	0.00824	0.00563	3.03	NA	NA	40	NA	0.0102

Table 5
RO System Reject Water Analytical Data
Navajo Refinery, Artesia, New Mexico

		Volatiles				Semi Volatiles	Anions			Total Alkalinity
		Benzene	Ethyl benzene	Tetrachloro ethene	Xylenes	Naph thalene	Chloride	Fluoride	Sulfate	
	Units:	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
	CGWSL:	5	700	5	620	30	250	1.6	600	-
	Source:	MCL	MCL	MCL	WQCC	WQCC	WQCC	WQCC	WQCC	-
	Date									
Reverse Osmosis Reject Water	12/27/2004	<5	<5	<5	<10	<10	233	3.16	1,660	622
	1/16/2007	NA	NA	NA	NA	NA	515	3.98	2,160	669
	2/22/2007	<5	<5	<5	<15	<5	583	3.38	1,920	638
	7/5/2007	<5	<5	<5	<15	<5	328	2.91	1,560	520
	12/14/2007	<5	<5	<5	<15	<5	464	3.46	1,910	982
	2/7/2008	<5	<5	<5	<15	<5	417	2.55	1,540	575
	5/22/2008	<5	<5	<5	<15	<5	293	2.82	1,530	296
	8/29/2008	<5	<5	<5	<15	<5	241	3.98	1,980	869
	12/4/2008	<5	<5	<5	<15	<5	307	3.76	1,810	819
	2/23/2009	NA	NA	NA	NA	NA	325	3.17	1,740	691
	5/7/2009	NA	NA	NA	NA	NA	392	2.83	1,740	664
	8/25/2009	NA	NA	NA	NA	NA	461	3.62	1,870	729
	11/9/2009	NA	NA	NA	NA	NA	525	3.92	2,040	787
	2/25/2010	NA	NA	NA	NA	NA	355	3.1	1,650	613
	5/27/2010	NA	NA	NA	NA	NA	180	2.66	1,290	557
	8/12/2010	NA	NA	NA	NA	NA	357	3.95	2,220	920
	11/23/2010	NA	NA	NA	NA	NA	344	3.46	1,750	822
	2/23/2011	NA	NA	NA	NA	NA	378	2.76	1,480	697
	5/24/2011	NA	NA	NA	NA	NA	167	3.59	1,930	848
	8/23/2011	NA	NA	NA	NA	NA	55.3	3.32	1,630	773
	11/16/2011	NA	NA	NA	NA	NA	54.4	2.62	1,150	623

Footnotes and Definitions

3.16 Concentration shown exceeds the CGWSL

Abbreviations:

CGWSL = Critical Groundwater Screening Level (see Table 3)
mg/L = Milligrams per liter
NA = Not analyzed

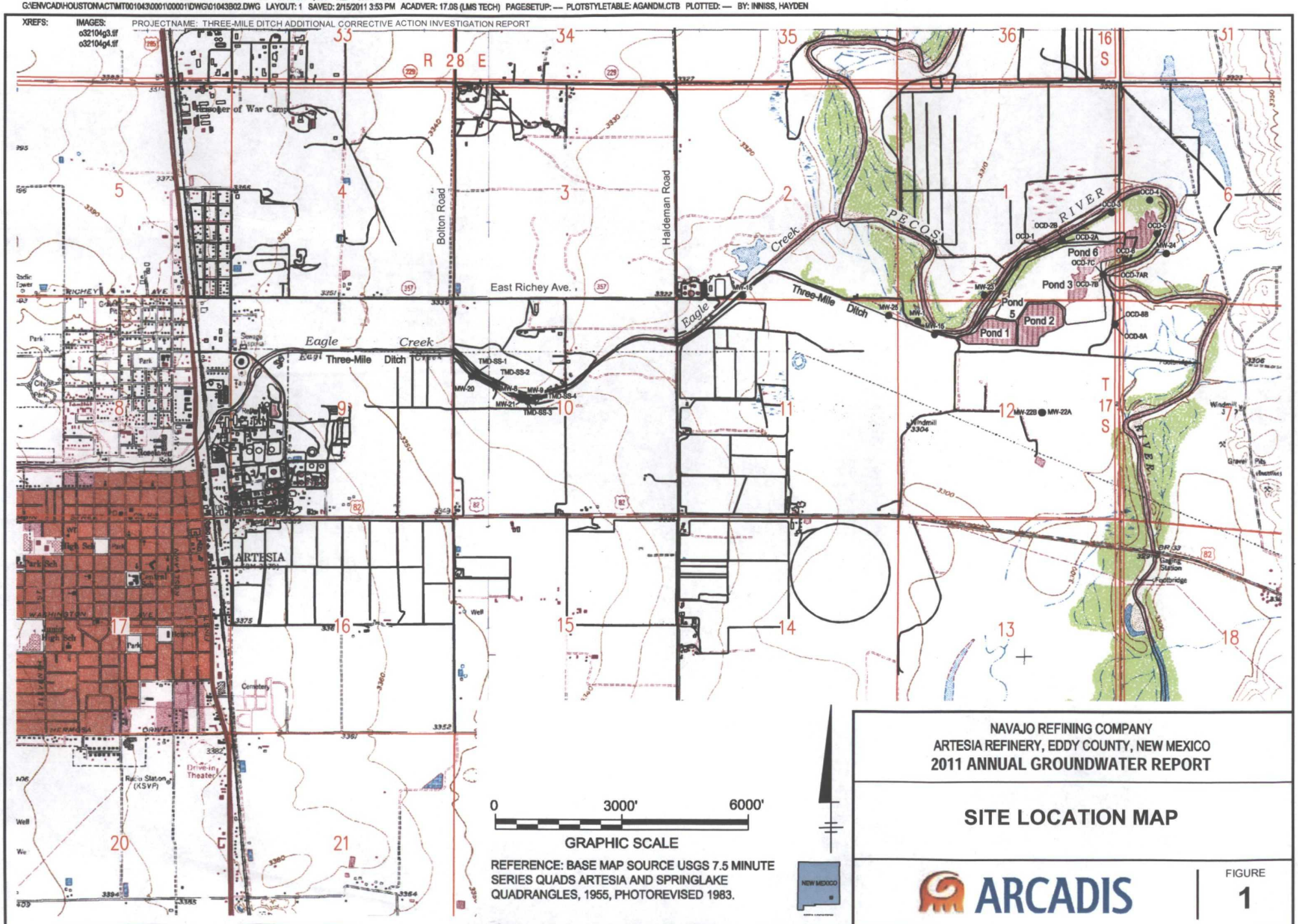
CGWSL Source (see Table 3):

" - " = No standard available
MCL = Maximum Contaminant Level from the National Primary Drinking Water Standards
WQCC = Water Quality Control Commission; standard for groundwater from NMAC 20.6.2.3103

Table 6
Summary of Production from Recovery Trenches and Wells
Navajo Refinery, Artesia, New Mexico

Recovery Well	Volume of Hydrocarbons Recovered (gallons)					Volume of Water Recovered (gallons)				
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total 2011	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total 2011
RW-1	0	1,602	1,170	0	2,772	0	14,418	10,530	0	24,948
RW-2	0	0	1,980	74,520	76,500	0	0	17,820	670,680	688,500
RW-4	0	0	0	0	0	0	0	0	0	0
RW-5	5,310	11,838	0	0	17,148	47,790	106,542	0	0	154,332
RW-6	0	0	0	0	0	0	0	0	0	0
RW-7	0	6	696	0	702	0	54	6,264	0	6,318
RW-8	0	13,428	3,480	0	16,908	0	120,852	31,320	0	152,172
RW-9	0	0	0	0	0	0	0	0	0	0
RW-10	0	0	0	0	0	0	0	0	0	0
RW-11	0	0	0	0	0	0	0	0	0	0
RW-12	0	0	0	0	0	0	0	0	0	0
RW-13	0	0	0	0	0	0	0	0	0	0
RW-14	0	0	0	0	0	0	0	0	0	0
RW-15	0	0	0	0	0	0	0	0	0	0
RW-16	0	0	0	0	0	0	0	0	0	0
RW-17	0	0	0	0	0	0	0	0	0	0
RW-18	0	0	0	0	0	0	0	0	0	0
Chase	0	0	351	233	584	0	0	34,771	23,077	57,848
KWB-4	7	22	144	109	282	0	0	0	0	0
KWB-5	0.5	0	0	0	1	0	0	0	0	0
KWB-6	2	13	81	61	157	0	0	0	0	0
KWB-8	0	0	0	0	0	0	0	0	0	0
MW-34	0	226	190	0	416	0	0	0	0	0
MW-64	0	24	0	44	68	0	0	0	0	0
MW-65	0	17	35	101	153	0	0	0	0	0
MW-85	3	1	5	0	8	0	0	0	0	0
MW-86	3	1	5	0	9	0	0	0	0	0
MW-94	1,500	327	335	30	2,192	0	0	0	0	0
MW-96	0	2	0	0	2	0	0	0	0	0
MW-97	0	58	291	333	682	0	0	0	0	0
MW-102	0	30	58	129	217	0	0	0	0	0
TOTAL	6,825	27,592	8,821	75,560	**118,798**	47,790	241,866	100,705	693,757	**1,084,118**

CITY: HOU-TX DIV 85/... ...NV DB: HI LD: PIC: PM: PK TM: LYR: ON=*;OFF=*REF* UN: 31-009-00403
G:\ENVCAD\HOUSTON\ACT\MT001043\0001\000011\DWG\01043B02.DWG LAYOUT: 1 SAVED: 2/15/2011 3:53 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: AGANDM.CTB PLOTTED: --- BY: INNISS, HAYDEN
XREFS: IMAGES: o32104g3.tif o32104g4.tif
PROJECTNAME: THREE-MILE DITCH ADDITIONAL CORRECTIVE ACTION INVESTIGATION REPORT



REFERENCE: BASE MAP SOURCE USGS 7.5 MINUTE SERIES QUADS ARTESIA AND SPRINGLAKE QUADRANGLES, 1955, PHOTOREVISED 1983.

NAVAJO REFINING COMPANY
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO
2011 ANNUAL GROUNDWATER REPORT

SITE LOCATION MAP

ARCADIS

FIGURE 1

ARCADIS

Appendices (all on compact disk)

A – Well Completion Logs

B – Field Sampling Notes

C – Laboratory Reports and Tabulated Data 2009-2011

Tables: C.1 Groundwater Analytical Data 2009-2011: Total Petroleum Hydrocarbons

C.2 Groundwater Analytical Data 2009-2011: Total Metals

C.3 Groundwater Analytical Data 2009-2011: Dissolved Metals

C.4 Groundwater Analytical Data 2009-2011: Volatile Organic Compounds

C.5 Groundwater Analytical Data 2009-2011: Semivolatile Organic Compounds

C.6 Groundwater Analytical Data 2009-2011: Water Quality Parameters

2011 Analytical Data Reports

D – Plots of COC Concentrations and Groundwater Elevation Versus Time

E – Data Validation Reports

F – Recovery System Records