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2010 Facility Wide Groundwater Monitoring Workplan

NMD048918817 and DP GW-028

January 2010

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2010 Facility Wide Groundwater Monitoring Workplan NMD048918817 and DP GW-028

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TX00836.0002

Date:
January 15, 2010

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Table of Contents

Acronyms and Abbreviations iii

Executive Summary iv

1. Introduction 1

2. Background 3

3. SITE CONDITIONS 5

3.1 Surface Conditions 5

3.1.1 Area Land Uses 5

3.1.2 Topography 5

3.1.3 Surface Water Drainage Features 5

3.2 Subsurface Conditions 6

3.2.1 Soils 6

3.2.2 Regional Geology 6

3.2.2.1 Quaternary Alluvium 7

3.2.2.2 Permian Artesian Group 8

3.2.2.3 San Andres Formation 9

3.2.3 Regional Groundwater 9

3.2.3.1 Near-Surface Saturated Zone 9

3.2.3.2 Valley Fill Aquifer 10

3.2.3.3 Deep Artesian Aquifer 12

4. Scope of Services 13

4.1 Health and Safety Considerations 13

4.2 Routine Monitoring Activities 13

4.3 Groundwater Sample Analyses 13

4.3.1 2006 Groundwater Analytical Requirements 13

4.3.2 Proposed Groundwater Monitoring Program 14

5. Groundwater Sampling Methodology 17

5.1 Well Gauging 17

5.2 Well Purging 17

5.3 Groundwater Sample Collection and Handling 18

5.4 Analytical Methods 19

5.5 Quality Assurance/Quality Control Samples 19

5.6 PSH Sample Collection 20

5.7 Decontamination Procedures and Investigation Derived Wastes 21

5.7.1 Liquid Wastes 21

5.7.2 Solid Wastes 21

6. Reporting 22

7. Schedule 24

Tables

Table 1 Proposed Groundwater Monitoring Program

Figures

Figure 1 Site Location Map

Figure 2 Well Locations

Appendix

A Summary of Groundwater Analytical Results from 2006 through 2009

B Field Forms

Acronyms and Abbreviations

CMI	Corrective Measures Implementation
DO	Dissolved Oxygen
DRO	Diesel Range Organics
EP	Evaporation Ponds
EPA	Environmental Protection Agency
GRO	Gasoline Range Organics
HSWA	Hazardous and Solid Waste Amendment
mg/L	milligrams per liter
mm	millimeters
MTBE	Methyl tert butyl ether
NCL	North Colony Landfarm
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
OCD	Oil Conservation Division
ORP	Oxygen Reduction Potential
PCC	Post Closure Care
ppm	parts per million
PSH	Phase Separated Hydrocarbons
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SVOC	Semivolatile Organic Compounds
TDS	Total Dissolved Solids
TEL	Tetra ethyl lead
TMD	Three Mile Ditch
VOC	Volatile Organic Compounds
WQCC	Water Quality Control Commission

Executive Summary

The Navajo Refining Company (Navajo) owns and operates the Artesia Refinery (Refinery), which is located in Artesia, New Mexico. The facility has been in operation since the 1920's and processes crude oil into asphalt, fuel oil, gasoline, diesel, jet fuel and liquefied petroleum gas. Recently, the refinery completed expansion projects that increased the processing capacity to 100,000 barrels of crude oil per day.

In October 2003, the Secretary of the New Mexico Environment Department (NMED) issued a Post-Closure Care Permit (PCC Permit) for the Artesia Refinery, which has U.S. Environmental Protection Agency (EPA) ID Number NMD048918817. Among other action items, the PCC Permit authorizes and requires Navajo (the Permittee) to conduct facility wide groundwater monitoring. The purpose of the groundwater monitoring program is to evaluate for the presence, nature and extent of hazardous and regulated constituents pursuant to Section 20.4.1.500 of the New Mexico Administrative Code (NMAC) and the Water Quality Control Commission (WQCC) standards included in 20 NMAC 6.2.

The New Mexico Oil Conservation Division (OCD) issued a renewal to Discharge Permit GW-028 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.

This Facility Wide Groundwater Monitoring Workplan (Workplan) is an update of the previous Workplan submitted to NMED and OCD in 2006 and provides the specific groundwater monitoring activities to be conducted throughout calendar year 2010. The purpose of this Workplan is to direct the observation and characterization of the nature and extent of groundwater contamination beneath or migrating from the Refinery. This Workplan contains all groundwater monitoring activities that will be conducted to satisfy both the NMED PCC Permit and the OCD Discharge Permit requirements.

The groundwater monitoring program is focused specifically on monitoring the following areas:

- The closed Tetra Ethyl Lead (TEL) Impoundment;
- The inactive North Colony Landfarm (NCL);

- The inactive Evaporation Ponds (EP); and
- The impacted vadose zone located beneath the Refinery, extending east along the direction of flow.

This Workplan follows the general outline suggested for a work plan provided in Appendix E of the PCC Permit, while incorporating the requirements of Sections 20 and 22 of the Discharge Permit.

This Workplan provides a summary of historic groundwater monitoring data and describes the locations of monitoring and recovery wells. Based on the historic monitoring program, Navajo is proposing revisions to the facility-wide groundwater monitoring plan. This Workplan provides details of the proposed revisions and a schedule for implementation of the 2010 groundwater monitoring plan.

1. Introduction

The Navajo Refining Company (Navajo) owns and operates the Artesia Refinery, which is located in Artesia, New Mexico (Figure 1). The facility has been in operation since the 1920's and processes crude oil into asphalt, fuel oil, gasoline, diesel, jet fuel and liquefied petroleum gas. Recently, the refinery completed expansion projects that increased the processing capacity to 100,000 barrels of crude oil per day.

In October 2003, the Secretary of the New Mexico Environment Department (NMED) issued a Resource Conservation and Recovery Act (RCRA) Post-Closure Care Permit (PCC Permit) for the Artesia Refinery, which has U.S. Environmental Protection Agency (EPA) ID Number NMD048918817. Among other action items, the PCC Permit authorizes and requires Navajo (the Permittee) to conduct facility wide groundwater monitoring. The purpose of the groundwater monitoring program is to evaluate for the presence, nature and extent of hazardous and regulated constituents pursuant to Section 20.4.1.500 of the New Mexico Administrative Code (NMAC) and the Water Quality Control Commission (WQCC) standards included in 20 NMAC 6.2.

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- The impacted vadose zone located beneath the Refinery, extending east along the direction of flow.

The closed TEL Impoundment is located near the eastern boundary of the active Refinery and south of Eagle Creek. The inactive NCL is located near the northwestern corner of the Refinery. The inactive EP area is located approximately three miles east of the active Refinery, south and west of the Pecos River. The impacted vadose zone is located beneath the Refinery and extends to the east from the active Refinery in the direction of groundwater flow.

This Workplan describes the planned activities that will be conducted in 2010 to continue monitoring the groundwater and continue interim recovery of phase separate hydrocarbons (PSH). The format of this Workplan follows the general outline specified for a workplan in Appendix E of the PCC , while incorporating the requirements of Sections 20 and 22 of the Discharge Permit.

2. Background

Navajo Refining Company operates a 100,000 barrel-per-day petroleum Refinery located at 501 East Main Street in the city of Artesia, Eddy County, New Mexico. The facility has been in operation since the 1920's and processes crude oil into asphalt, fuel oil, gasoline, diesel, jet fuel, and liquefied petroleum gas. The refinery is an active, growing industrial facility. There are no plans to close the facility or reduce the size of the operation.

In recent years Navajo has made significant investments in the facility to increase production, make low sulfur gasoline and diesel and other clean fuels, and reduce air emissions. While not possible to accurately predict the lifespan of the facility, it has been in operation for over 80 years and could easily remain in operation for that many more years given the demand and supply for refined fuel products in the U.S.

The Navajo Refinery is regulated under the Resource Conservation and Recovery Act (RCRA), having EPA ID Number NMD 048918817. The NMED issued a Hazardous Waste Facility Permit to Navajo effective August 21, 1989.

Included as part of the 1989 Hazardous Waste Facility Permit was a Hazardous and Solid Waste Amendment (HSWA) Permit issued by the EPA. This permit required Navajo to identify all historical and current non-hazardous SWMUs and investigate those that had the potential to pose a threat to human health or the environment. SWMUs which pose a potential threat must undergo additional investigation (a RCRA Facility Investigation [RFI] and possibly Corrective Measures Implementation [CMI]) to minimize the threat.

Following completion of the Phase I RFI in December, 1990, it was agreed by EPA and NMED that additional investigations were required for the Three Mile Ditch (TMD) and Evaporation Ponds (EPs) located east of the refinery. The second phase of investigation of those areas was conducted from 1991 through 1993, resulting in the RFI Phase II Report finalized in November, 1993. A final Phase III Investigation Report addressing comments from the EPA and NMED was submitted in January 1996 along with a proposed workplan for removal of waste soils from TMD. In December 1997, a consolidated report was submitted to NMED that summarized the various investigations performed up to that time along with recommendations for corrective actions in the TMD and the EP areas.

At the request of NMED, Navajo submitted a Post-Closure Permit Application in June 1998. The original intent of this application, to address only closure and post-closure activities at the EPs and TMD, was expanded to include a complete RCRA Permit renewal application.

The Secretary of the NMED issued a Post-Closure Care Permit to Navajo Refining Company, the owner and operator of the Artesia Refinery Facility (EPA ID number NMD 048918817) effective October 5, 2003. The PCC Permit authorizes and requires the Permittee to monitor the groundwater, maintain all groundwater monitoring wells and comply with applicable regulations of 20.4.1.500 NMAC during the post-closure period. Specific groundwater monitoring requirements are included in the PCC Permit for the areas of the TEL Impoundment, the NCL, the EP area, and other areas identified through implementation of the investigations of various SWMUs.

The OCD issued a renewal of Discharge Permit GW-028 dated August 20, 2008. The Discharge Permit authorizes and requires the Permittee to maintain PSH recovery systems and to conduct semiannual groundwater monitoring. The Discharge Permit requires submittal of an annual report summarizing the results of the monitoring and recovery programs.

In 2006, Navajo submitted a Groundwater Monitoring Workplan that combined the requirements of the two permits into a comprehensive monitoring program. This Workplan is an update of the 2006 workplan. This Workplan includes a revised monitoring schedule based on historic results and trends, as described in the following sections.

3. SITE CONDITIONS

3.1 Surface Conditions

3.1.1 Area Land Uses

The area north, south and east of the facility is sparsely populated and used primarily for agricultural and ranching purposes. The primary business and residential areas of the City of Artesia are located to the west, southwest and northwest of the refinery. There are a few commercial businesses south of the refinery along Highway 82, including an oil-field pipe company located at the southeast corner of the plant. Much of the property for a half mile north to East Richey Avenue and east toward Bolton Road is owned by Navajo. Much of the area east and northeast to Haldeman Road is a cultivated pecan orchard or used for other agricultural and ranching purposes.

The active refinery and much of the surrounding property owned by Navajo is fenced and guarded with controlled entry points.

3.1.2 Topography

The Navajo Refinery facility is located on the east side of the City of Artesia in the broad Pecos River Valley of Eastern New Mexico. The topography of the site and surrounding areas is shown in Figure 1. The average elevation of the city is 3,380 feet above mean sea level. The plain on which Artesia is located slopes eastward at about 20 feet per mile.

3.1.3 Surface Water Drainage Features

Surface drainage in the area is dominated by small ephemeral creeks and arroyos that flow eastward to the Pecos River, located three miles east of the city.

Natural surface drainage at the facility is to the north and east. The major drainage in the immediate area of the site is Eagle Creek (or Eagle Draw), an ephemeral watercourse normally flowing only following rain events, that runs southwest to northeast through the process area of the refinery and then eastward to the Pecos River. Upstream of the refinery, Eagle Draw functions as a major stormwater conveyance for the community. It also drains outlying areas west of the city and is periodically scoured by intense rain events.

The elevation of Eagle Draw is 3,360 feet at its entrance to the refinery and decreases to approximately 3,305 feet at its confluence with the Pecos River. Eagle Draw was channelized from west of Artesia to the Pecos River to help control and minimize flood events. In the vicinity of the refinery, the Eagle Draw channel was cemented to provide further protection during flood events. A check dam was also constructed west of Artesia along Eagle Draw. At this time, federal floodplain maps indicate that most of the city and the refinery have been effectively removed from the 100 year floodplain.

3.2 Subsurface Conditions

3.2.1 Soils

Soils at the refinery are primarily of the Pima and Karro series. Soils characterized for permitting the NCL were about 60% Pima and 40% Karro soils. The Pima and Karro soils have similar properties. Pima soils are deep, well drained, dark colored, calcareous soils, which occur on floodplains of narrow drainageways (e.g. – Eagle Creek). These soils have moderate shrink-swell potential and were subject to periodic flooding. Runoff from Pima soils is slow, permeability is moderately low and the water-holding capacity is high. The effective rooting depth is greater than five feet and the water table is deeper than five feet.

The Karro soils are highly calcareous. Calcium carbonate typically accumulates as caliche at a depth of about 45 inches. These soils are found on level to gently sloping terrains and are susceptible to wind erosion. Runoff is slow and water-holding capacity is high. Permeability is moderate and the effective rooting depth and depth to groundwater are both over five feet.

3.2.2 Regional Geology

Navajo Refinery is located on the northwest shelf of the Permian Basin. In this region, the deposits are comprised of approximately 250 to 300 feet of Quaternary alluvium uncomformably overlying approximately 2,000 feet of Permian clastic and carbonate rocks. These Permian deposits uncomformably overlie Precambrian syenite, gneiss and diabase crystalline rocks. The relationships between the sedimentary deposits are discussed below.

3.2.2.1 Quaternary Alluvium

The Quaternary alluvium in the Refinery area is dominantly comprised of clays, silts, sands and gravels deposited in the Pecos River Valley. These "valley fill" deposits extend in a north-south belt approximately 20 miles wide, generally west of the Pecos River. The thickness of the valley fill varies from a thin veneer on the western margins of the Pecos River valley to a maximum of 300 feet in depressions, one of which is located beneath the Refinery. These depressions have resulted from dissolution of the underlying Permian carbonates and evaporites. The sedimentology and mineralogy of the valley fill deposits can be divided into three units: the uppermost carbonate gravel unit, the interbedded clay unit, and the underlying quartzose unit.

The carbonate gravel unit blankets the other valley fill units and forms a fairly uniform slope from the Permian rock outcrop areas on the west side of the Permian Valley east to the Pecos River floodplain. The unit consists of coarse-grained carbonate gravel deposits along major drainage ways to the Pecos River, which grade into brown calcareous silts and thin masses of caliche in the interstream regions. The carbonate gravel unit includes the Orchard Park, Blackdom and Lakewood terrace deposits of Fielder and Nye as well as Holocene and Pleistocene Pecos River alluvial deposits.

The agricultural land around Artesia is part of the Orchard Park terrace deposit, which forms a thin veneer overlying older valley fill alluvium. The Orchard Park terrace surface gently rises in elevation to between 5 and 25 feet above the Lakewood terrace. The Orchard Park is generally less than 20 feet in thickness in the Refinery area and is comprised of silt interbedded with poorly sorted lenses of mixed size pebbles in a silt and sand matrix. Chalky caliche commonly occurs in the upper layers.

The Blackdom terrace is about 40 to 50 feet in elevation above the Orchard Park terrace west of Artesia. However, the deposits associated with the Blackdom terrace are generally less than 20 feet in thickness. The Blackdom terrace deposits are coarser grained than the deposits associated with the Orchard Park and Lakewood terraces. In addition, the caliche soils have a higher density than those developed on the Orchard Park terrace.

The Lakewood deposits, the lowest of the three terrace units, are essentially the current alluvial sediments in the floodplain along the river. They consist of brown sandy silt interbedded with lenses of gravel and sand and some localized caliche in higher parts. The Lakewood terrace is confined to the area immediately adjacent to

the river and is underlain by Pleistocene alluvium deposited by the Pecos River and its tributaries.

The clay unit is not laterally continuous throughout the valley fill deposits, but occurs in isolated lenses generally overlying the quartzose unit. The clay unit is comprised of light-to-medium-gray clays and silts deposited in localized ponds and lakes. These ponds and lakes may have formed in conjunction with dissolution and collapse of the underlying Permian rocks.

The quartzose unit consists primarily of fragments of quartz and igneous rocks cemented by calcium carbonate. This unit is laterally contiguous throughout the Pecos River Valley and is generally less than 250 feet thick. The quartzose unit unconformably overlies Permian Rocks and lower quartzose gravels are commonly used for groundwater production.

3.2.2.2 Permian Artesian Group

The Permian Artesian Group is comprised of five formations (from shallowest to deepest): the Tansill, Yates, Seven Rivers, Queen and Grayburg Formations. The Tansill and Yates Formations outcrop at the surface east of the Pecos River and are not present in the vicinity of the Refinery.

The uppermost Permian formation in the Artesia area is the Seven Rivers Formation, which outcrops east of the Pecos River. This eastward-dipping formation is eroded and buried by the valley fill alluvium at a depth of 300 feet in the area between the river and the Refinery. Nearer the Refinery, the formation thins and disappears farther west. Where the formation is present, it consists of a sequence of evaporites, carbonates, gypsum and shale with isolated sand and fractured anhydrite/gypsum lenses.

An examination of available borehole logs by IT Corporation, in the mid-80s provided no indication that the Seven Rivers formation has been encountered beneath the Refinery. However, the lithologic logs of wells completed in the Refinery area describe unconsolidated alluvial deposits from depths of about 20 feet to over 250 feet.

In the area of the Refinery, the Queen and Grayburg Formations have been mapped as a single unit by geologists as consisting of about 700 feet of interbedded dolomite and calcareous dolomite, gypsum, fine-grained sandstone, carbonates, siltstone and mudstone. In locations where the Seven Rivers Formation is absent, the upper portion

of the Queen Formation acts as a confining bed between the deep artesian aquifer and the valley fill aquifer.

3.2.2.3 San Andres Formation

The San Andres Formation lies beneath the Grayburg and Queen Formations and immediately above the Precambrian crystalline basement rocks. The San Andres Formation is composed mainly of limestone and dolomite containing irregularly and erratic solution cavities, which range up to several feet in diameter. Its thickness is greater than 700 feet. The upper portion of the formation is composed of oolitic dolomite with some anhydrite cement.

3.2.3 Regional Groundwater

The principal aquifers in the Artesia area are within the San Andres Formation and the valley fill alluvium. In the vicinity of the Refinery process area is a near-surface water-bearing zone, apparently limited in vertical extent that is shallow with respect to the surface yet exhibits artesian properties at some monitoring wells. The deeper carbonate aquifer is referred to as the deep artesian aquifer, whereas the water-bearing zones of the shallower alluvial fill aquifer are referred to as the valley fill aquifer. Adjacent to the Refinery, the first water-bearing zone in the valley fill aquifer is referred to as the near-surface saturated zone.

3.2.3.1 Near-Surface Saturated Zone

Lithologic logs from monitor wells installed near the Refinery process area document a near-surface saturated zone overlying the main valley fill alluvium and containing water of variable quality in fractured caliche and sand and gravel lenses at depths of 15 to 30 feet below ground surface. This water is under artesian pressure for at least some or most of the year with static water levels 3 to 5 feet above the saturated zones.

Figure 2 depicts the monitoring wells installed in the area of the Refinery and the Evaporation Ponds east of the Refinery. Isopleths of the potentiometric surface, as measured in September 2008 in the near-surface saturated zone, are shown in Figure 2. The general direction of flow in this near-surface saturated zone is to the east toward the Pecos River.

Locally, this uppermost water zone is likely connected to Eagle Creek west of the Refinery and most likely discharges to marshes and shallow alluvium along the west

side of the Pecos River. The most probable sources of the water are thought to be recharged from Eagle Creek and lawn watering runoff from the grass-covered urban park that occupies the Eagle Creek Channel immediately upstream of the Refinery.

The water in the near surface saturated zone is highly variable in quality, volume, areal extent and saturated thickness. Concentrations of total dissolved solids (TDS) exceeding 2,000 milligrams per liter (mg/L) and sulfate exceeding 500 mg/L have been recorded on the northwest side of the Refinery near the NCL.

Appendix A contains a table that summarizes the groundwater monitoring analytical results of samples collected following the 2006 workplan. This table is a compilation of the data presented in the annual groundwater reports previously submitted to NMED and OCD that summarize the sampling conducted from 2006 through 2008. The data collected during 2009 have been added to the table in Appendix A. As can be seen, the shallow groundwater is impacted with constituents typically associated with hydrocarbons.

3.2.3.2 Valley Fill Aquifer

Quaternary alluvial deposits of sand, silt, clay and gravel are the main components of the valley fill aquifer. These sediments are about 300 feet thick in the area between the City of Artesia near the Refinery and the Pecos River. The three principal units in the valley fill are the carbonate gravel, clay and quartzose.

The carbonate gravel unit, described in an earlier section, is the uppermost alluvial unit in the valley fill. Coarse-grained gravels deposited in the major tributaries to the Pecos River grade to calcareous silts and thin zones of caliche in the interstream areas. Near the surface, groundwater is localized in thin discontinuous gravel beds typical of braided channel material deposited during flood events originating in the foothills and Sacramento Mountains to the west.

Wells completed in the valley fill aquifer typically are screened across from one to five water-producing zones. Thicknesses of up to 170 feet have been reported for water-production zones, but most are less than 20 feet. Producing zones are principally sand and gravel separated by less permeable lenses of silt and clay. Wells in the valley fill range from 40 to 60 feet below ground level and the formation yields water containing 500 to 1,500 parts per million (ppm) TDS. The average transmissivity of the alluvium has been estimated at 100,000 to 150,000 gallons per day per square foot.

Recharge of the shallow valley fill aquifer is generally attributed to irrigation return flow from pumpage of the aquifers and from infiltration from the Pecos River. In areas of the valley where the San Andres and valley fill aquifers are hydraulically connected in the subsurface, water tends to flow up from the deep to the shallow aquifer except in areas of heavy San Andres pumpage. The general direction of groundwater flow in the valley fill aquifer follows the regional stratigraphic dip eastward toward the Pecos River, then southward subparallel to the river.

North of Artesia, the river has been a gaining stream for most of the period of record. The potentiometric surface of the shallow aquifer slopes gently east and southeast, following regional stratigraphic dips.

However, south of Artesia in the vicinity and immediately east of Highway 285, heavy pumping between 1938 and 1975 reversed the hydraulic gradient. In this area the surface forms a shallow trough due to extensive water use for irrigation.

Adjacent to the Pecos River, the valley fill alluvium contains groundwater beginning at a depth of 6 to 12 feet. The alluvium is predominately silty sand, which possibly contains lenses of higher permeability material. Groundwater flow is subparallel to the Pecos River Valley and is generally toward the river, although during periods of high river flow, the hydraulic gradient may be away from the river into the alluvium.

Silt and clay deposits in the valley fill aquifer are not continuous, but occur as isolated lenses, generally overlying the quartzose unit. Most logs of wells located immediately to the north and east of the Refinery show considerable thicknesses of clays or clay mixtures. However, these clays may be more closely related to the fine-grained materials of the carbonate gravel unit found in the interstream areas between the major drainage ways.

The thickness of these clay/clay mixtures ranges from 20 to 160 feet. The intervals of occurrence differ from well to well, and thin zones or gravels are interspersed in the upper 100 feet. Drillers seeking deep artesian water drill through the valley fill zone and usually log large intervening zones as “clay and cap”. This lack of detail makes it difficult to correlate specific zones of coarse-grained sediments within the silt and clay deposits.

The quartzose unit is considered the primary production unit in the valley fill aquifer. Away from the Pecos River, the unit consists of fragments of sandstone, quartzite, quartz chert, igneous and carbonate rocks. The fragments range from medium grained

(1/4 mm) to pebble size (16 mm) and are commonly cemented with calcium carbonate. By contrast, in the vicinity of the river, the unit contains principally medium to coarse uncemented quartz grains.

Seventeen monitoring wells have been installed in the valley fill aquifer in the vicinity of the refinery and the evaporation ponds. The information available on the nearby irrigation wells indicate that at least two of those wells (RA-3156 and RA-3353) are screened in the valley fill aquifer. Historic analytical data from these wells does not indicate the presence of hydrocarbon impacts from refinery operations.

3.2.3.3 Deep Artesian Aquifer

The deep artesian aquifer is closely related to the Permian San Andres Limestone and generally consists of one or more water producing zones of variable permeability located in the upper portion of the carbonate rocks. However, in the Artesia area, the producing interval rises stratigraphically and includes the lower sections of the overlying Grayburg and Queen formations. Near the Refinery, the depth to the top of the producing interval is estimated to be about 440 feet. The Seven Rivers formation and the other members of the Artesia Group are generally considered confining beds although some pumpage occurs locally from fractures and secondary porosity in the lower Grayburg and Queen members.

The deep artesian aquifer has been extensively developed for industrial, municipal and agricultural use. The quality of water from this aquifer ranges from 500 ppm to more than 5,000 ppm TDS depending on location. In the Artesia area, water is generally derived from depths ranging from 850 feet to 1,250 feet below ground surface. The aquifer recharge is in the Sacramento Mountains to the west of Artesia. Extensive use of this aquifer in recent decades has lowered the potentiometric head in the aquifer in some locations from 50 to 80 feet below ground level, although extensive rainfall in some years may bring the water levels in some wells close to the surface.

Information available for irrigation well RA-4798 indicates that it is screened at 840 to 850 feet below ground surface, in the deep artesian aquifer. Historic analytical data from this well does not indicate the presence of hydrocarbon impacts from refinery operations.

4. Scope of Services

This section of the Workplan provides a detailed description of groundwater monitoring activities to be conducted.

4.1 Health and Safety Considerations

Groundwater monitoring activities will be performed in both active and historic process areas of the refinery, in the inactive EP area, along Three Mile Ditch, and in agricultural fields adjacent to the refinery. The primary health and safety considerations associated with the monitoring activities include the potential for the presence of harmful vapors and environmental hazards.

Any deviations from proposed sample locations due to health and safety considerations will be documented and discussed in the annual monitoring report.

4.2 Routine Monitoring Activities

The groundwater monitoring program includes the following activities:

- Semiannual gauging of monitoring and recovery wells.
- Semiannual collection of analytical samples from monitoring wells as well as from select recovery and irrigation wells.
- Collection and disposal of purge water generated during sample collection and decontamination water generated during gauging and sample collection.

4.3 Groundwater Sample Analyses

4.3.1 2006 Groundwater Analytical Requirements

The 2006 workplan requires the majority of the wells to be sampled semiannually and analyzed for the following:

- Volatile organic compounds (VOCs) by EPA Method 8260;
- Diesel Range Organics (DRO) by EPA Method 8015B;

- Gasoline Range Organics (GRO) by EPA Method 8015B;
- RCRA metals;
- Major cations and anions; and
- Nitrates/nitrites.

Not all wells are required to be analyzed for all of the parameters listed above. For instance, the wells designated "KWB" are not required to be analyzed for GRO. Table 1 of the 2006 workplan summarizes the analyses performed under that monitoring plan.

4.3.2 Proposed Groundwater Monitoring Program

Based on the historic data and current conditions, Navajo proposes to revise the monitoring program. Proposed revisions include reduction of sampling frequency as well as a reduction in the analytical suite, while maintaining an appropriate level of monitoring to assess the fate and transport of impacted groundwater.

Table 1 presents a detailed summary of the proposed revised monitoring schedule and program. The table provides the following information:

- Well identification;
- Approximate location of the well and the area of concern associated with the well;
- Well construction details (date installed, diameter, total depth, screened interval if available);
- Proposed sampling frequency; and
- Proposed analytical suite.

In general, the monitoring frequency will be as follows:

- All active and accessible monitoring and recovery wells will be gauged semiannually with an oil/water interface probe to monitor the presence and

thickness of PSH and to measure the depth to groundwater and total depth of each well.

- Monitoring wells that contain PSH, as indicated by an oil/water interface probe, will not be sampled during any event that PSH is present.
- Monitoring wells located along or near the downgradient edges of the impacted areas will be sampled semiannually.
- Select monitoring wells within the impacted areas will be sampled semiannually to monitor the concentrations within the dissolved phase plume areas. The wells selected to be sampled on a semiannual basis should provide adequate information to assess the fate of dissolved phase constituents within known impacted areas.
- Other wells within the center of impacted areas will be sampled annually to monitor the concentrations throughout the dissolved phase plume areas.
- Active and accessible irrigation wells will be sampled annually.
- Recovery wells will be sampled annually, if PSH is not present.

Figure 3 depicts the current known extent of PSH and dissolved phase organic impacts in groundwater. This figure also graphically summarizes the proposed monitoring program, with distinct symbols indicating those wells that will be gauged semiannually but not sampled, those wells that will be gauged and sampled semiannually and those wells that will be gauged semiannually and sampled annually.

As discussed in Section 3.2.3.1, Appendix A presents a summary of previously collected and reported groundwater monitoring results from 2006 through 2008 as well as the 2009 results, which have not yet been submitted. Current groundwater screening levels are provided at the top of the table. Results that exceed the screening level are shown in bold italic font with the cell highlighted in red. In a few instances, the result was reported as not detectable with a detection limit greater than the screening level and those cells are highlighted in yellow.

The primary constituents of concern in groundwater are DRO and GRO as well as the individual volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) associated with hydrocarbons. The proposed monitoring program includes

laboratory analysis for DRO in all dissolved phase samples. GRO and VOCs will be analyzed from select samples, similar to the historic monitoring program. VOC analyses will be performed by Method 8260 and will include methyl tert butyl ether (MTBE) and naphthalene.

The 2006 workplan states that groundwater samples will be analyzed for RCRA metals, but does not specify whether the analyses should be for the RCRA 8 metals or a longer list of metals. As a result, some of the historic samples have been analyzed for RCRA 8 metals while other samples were analyzed for a more comprehensive list of metals. Of the RCRA 8 metals, cadmium, mercury and silver concentrations in samples collected during 2006 through 2009 did not exceed the screening levels. Arsenic, barium, chromium, lead and selenium have been reported at concentrations above the screening levels in multiple wells. Therefore, Navajo proposes to reduce the metals analyses to include only arsenic, barium, chromium, lead and selenium only. Future samples will not be analyzed for cadmium, mercury or silver.

The 2006 workplan requires that almost all samples be analyzed for major cations and anions as well as for nitrates/nitrites. Although not required by the monitoring plan, the majority of the samples have also been analyzed for total dissolved solids and alkalinity, as shown in the table in Appendix A. The reported concentrations of these analytes do not fluctuate significantly. Therefore, Navajo proposes to reduce the frequency for these analytes to annually rather than continue with semiannual analyses.

Table 2 provides a summary of the proposed changes to the analytical program for the dissolved phase groundwater samples.

5. Groundwater Sampling Methodology

This section provides a summary of the procedures that will be used to implement this Workplan.

5.1 Well Gauging

At the beginning of each semiannual sampling event, all monitoring and recovery wells listed on Table 1 will be gauged to record the depth to PSH (if present), the depth to water, and the total depth of the well. The gauging will be performed using an oil/water interface probe attached to a measuring tape capable of recording measurements to the nearest 0.01 foot.

Gauging measurements will be recorded on a field gauging form. A copy of a typical field gauging form is contained in Appendix B of this Workplan.

Data obtained from the gauging will be reported in the annual groundwater monitoring report. The data will be used to develop groundwater contour maps and PSH thickness isopleths, which will also be included in the annual report.

5.2 Well Purging

All zones in each monitoring well shall be purged by removing groundwater prior to sampling in order to ensure that formation water is being sampled. Purging will be accomplished with the use of either a peristaltic or submersible electric sampling pump.

The peristaltic pump will be used where practical to apply low-flow purging and sampling procedures. Table 1 lists the monitoring wells that are anticipated to be purged and sampled using the peristaltic pump.

The submersible electric sampling pump will be used where the depth to water in a monitoring well is greater than 25 feet (limitation of peristaltic pump) and for sample collection from recovery wells. When this pump is used to purge a well, a minimum of three well casing volumes will be removed. In the event that purge parameters do not stabilize, as specified below, a maximum of 10 well casing volumes will be removed prior to sample collection.

Irrigation wells located on adjacent property are included in the groundwater monitoring program. These wells have dedicated electric pumps and do not have access to allow

for gauging of the water level; thus, the volume of water present in the well casing cannot be calculated. If access is available and power is provided to the pump, these wells will be purged using the irrigation pump. Purging will continue until the purge parameters stabilized, as described below.

Purge volumes shall be determined by monitoring, at a minimum, groundwater pH, specific conductance, temperature, dissolved oxygen (DO) concentrations, and oxidation-reduction potential (ORP) during purging. These measurements will be made using appropriate equipment, such as a multiparameter water quality monitoring meter such as a YSI 600XL or similar device, and a flow-through cell. The readings and the volume of water purged between intervals will be obtained at routine intervals during the purging process and recorded on the field log. A sample field log is provided in Appendix B.

Purging will be considered complete when four of the five purge parameters have stabilized. The specified stabilization criteria for pH, temperature and DO are plus or minus 0.2 units, specific conductance is plus or minus 0.02 units and ORP is plus or minus 20 units.

If a well should purge dry, then it will be allowed to recover. When the water level has returned to a minimum of 75 percent of the level measured at the beginning of the sampling event, a sample will be collected for analysis.

The equipment used for the field measurements (such as a YSI multiparameter water quality meter or similar device) will be calibrated at least once during each day of the sampling event. Calibration will be performed according to the equipment manufacturer's directions. Calibration data will be recorded in the daily field notes.

Purged groundwater will be collected and disposed of properly, as described in Section 5.7.

5.3 Groundwater Sample Collection and Handling

Samples will be collected following purging and will consist of pumping groundwater directly into the laboratory provided sample containers. Dedicated tubing will be used for each well to prevent the potential for cross-contamination.

Containers will be labeled and placed into appropriate containers (coolers) with ice for shipment to the analytical laboratory. Each label will clearly identify the sample

identifier, the date and time of collection, the analytical method to be performed, and the sampler's initials.

Shipping containers (coolers) will be packed with ice or similar cooling materials to maintain appropriate sample temperatures. Adequate padding will be provided to prevent breakage or puncture of sample containers during shipment. The containers will be shipped via express courier to the laboratory for analyses. Chain-of-custody forms will be shipped inside each container to properly track the samples in each container. A chain-of-custody seal will be placed on each shipping container and inspected upon arrival at the laboratory to ensure the integrity of the shipped samples.

5.4 Analytical Methods

The groundwater samples will be analyzed for the parameters listed in Table 1, which include the following COCs:

- DRO;
- GRO;
- VOCs;
- Metals (arsenic, barium, chromium, lead and selenium only);
- Major cations and anions (calcium, chloride, fluoride, potassium, sodium, sulfate);
- Nitrates/nitrites (as nitrogen); and
- Total dissolved solids.

Not all of the COCs will be analyzed for every sample or during every sampling event. Table 1 summarizes which samples will be analyzed for which parameters during each event.

5.5 Quality Assurance/Quality Control Samples

QA/QC samples will be collected to monitor the validity of the sample collection procedures. The following samples will be collected for QA/QC purposes:

- Field duplicates will be collected at a rate of 10 percent, or 1 field duplicate for every 10 groundwater samples. Field duplicates will be analyzed for the same COCs as the parent sample.

- Equipment blanks will be collected from non-dedicated sampling apparatus at a frequency of 5 percent, with a minimum of 1 equipment blank per day. Equipment blank samples will be analyzed for the same COCs as the sample associated with the equipment blank (sample collected immediately prior to the equipment blank). When dedicated sampling materials are used, such as dedicated tubing and a peristaltic pump, no equipment blank samples will be collected.

- Trip blanks will accompany each shipping container (cooler) that contains samples to be analyzed for VOCs.

Laboratory QA/QC samples will be performed according to the EPA test methodologies specified for each method run on a field sample. The laboratory QA/QC samples will include reagent or method blanks, surrogates, matrix spike/matrix spike duplicates, blank spike/blank spike duplicates and/or laboratory duplicates, as appropriate for each method. The laboratory QA/QC samples will be run at the frequency specified by each method.

5.6 PSH Sample Collection

In the event that PSH is present in any of the monitoring wells that have not historically contained PSH, samples may be collected when sufficient volume is present for adequate fingerprint analysis. A minimum of 10 mL is required for fingerprint analysis.

PSH samples will be collected using a hand bailer. The bailer will be lowered into the well slightly into the PSH and water column. The bailer will be slowly removed and groundwater decanted from the bottom of the bailer. The PSH remaining in the bailer will then be placed into the sample container, and the container will be sealed and properly labeled for shipment. Excess groundwater and PSH will be returned to the well from which it was removed.

5.7 Decontamination Procedures and Investigation Derived Wastes

5.7.1 Liquid Wastes

All reusable groundwater sampling and gauging equipment will be decontaminated prior to coming in contact with the sample media to minimize the potential for cross-contamination of samples. This equipment includes all downhole well gauging devices, submersible pumps, water quality parameter meters and flow-through cell. The equipment will be washed with a brush in a bath of soap and water then rinsed twice with distilled water.

Decontamination fluids will be contained and placed in a 55 gallon drum for later disposal in the plant wastewater treatment system, upstream of the API separator.

Groundwater removed from each temporary well during development and purging will be containerized in a labeled drum then disposed of within the plant wastewater treatment system, upstream of the API separator.

5.7.2 Solid Wastes

Dedicated disposable sampling equipment, including tubing and bailers, will be disposed of in the plant hazardous waste bins.

All sampling personnel will wear disposable latex gloves while collecting and handling samples. Gloves will be replaced prior to collection of each sample in order to ensure that field-induced cross-contamination does not affect the results of the investigation. Gloves will be collected and disposed of along with soil cuttings and plastic sleeves in the hazardous waste bins.

Waste disposal records are maintained at the Refinery.

6. Reporting

Both the PCC Permit and the Discharge Permit require submittal of an annual report that summarizes the results of the groundwater monitoring program as well as remediation activities conducted for groundwater. Navajo currently submits a combined annual report that meets the requirements of both permits. The report follows the general outline provided in Appendix E of the PCC Permit and incorporates the requirements of 20.B, 22.B, and 20.F of the Discharge Permit.

At a minimum, the report will contain the following:

- Description of groundwater monitoring and remediation activities conducted throughout the reporting period;
- Summary table of semiannual groundwater and PSH gauging data, with corrected water table elevation for all wells containing PSH;
- Summary table of groundwater quality parameters recorded in the field (purge parameters);
- Summary of laboratory analytical data with comparison to screening levels;
- Summary of QA/QC data review and validation;
- Groundwater contour maps depicting the groundwater gradient for each semiannual monitoring event of the reporting period, including site features and the direction and magnitude of the hydraulic gradient;
- PSH thickness isopleths maps for each semiannual monitoring event during the reporting period;
- Isoconcentration maps for major constituents of concern;
- Plots of static water elevation versus time in key wells, specifically those that contain PSH;
- Tabulation of the monthly and cumulative volume of PSH removed from recovery wells or monitoring wells throughout the reporting period; and

- Recommendations, including any recommended changes to the groundwater monitoring program.

The annual report will be submitted in hardcopy and electronic format to both NMED and OCD for their review.

7. Schedule

The groundwater monitoring program is conducted on a semiannual basis. The first semiannual event will occur no more than 30 days prior to the start of the irrigation season but no later than April 30 of each year. Typically, the first semiannual event occurs in March or April of each calendar year.

The second semiannual event will occur no later than 30 days after the conclusion of the irrigation season or November 15 each year. Typically, the second semiannual event occurs in September of each calendar year.

The wells that will be sampled on an annual basis only will be sampled during the first semiannual event of each calendar year.

Navajo will notify both NMED and OCD at least 15 calendar days prior to the initiation of each semiannual sampling event.

The annual groundwater monitoring report will be submitted to NMED and OCD no later than February 28 of the calendar year following sample collection.

ARCADIS

Appendix A

Summary of Groundwater Analytical Results from 2006 through 2009

ARCADIS

Appendix B

Field Forms

Table 1
Proposed Monitoring Program and Schedule
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	Location Information		Well Construction Information [a]							PSH Expected? [b]	Gauging Frequency	Analytical Suite and Frequency [c]							
		Associated Area of Concern	Approximate Location	Date Installed	Diameter (in)	Top of Casing (ft MSL)	Ground Surface (ft MSL)	Total Depth (ft btoc)	Screen Interval (ft bgs)	Surface Finish			Purge Parameters	DRO	GRO	VOCs	Metals	Cations/ Anions	Nitrates / Nitrites as Nitrogen	Total Dissolved Solids
KWB #1A	Monitoring	Downgradient	S of ED, W of BR	Feb-92	2	3351.87	3348.70	33.80	18 to 32	stickup		SA	SA	SA	-	SA	SA	A	A	A
KWB #1B	Monitoring	Downgradient	S of ED, W of BR	Feb-92	4	3351.06	3348.80	34.00	18 to 32	stickup		SA	No analytical samples to be collected							
KWB #1C	Monitoring	Downgradient	S of ED, W of BR	Sep-92	4	3351.59	--	52.75	30.5 to 49.5	stickup		SA	No analytical samples to be collected							
KWB #2R	Monitoring	S Refinery	S of US82 on Armstrong & Son		2	3354.31		39.91			Y	SA	No analytical samples to be collected							
KWB #3AR	Monitoring	Downgradient	S of US82, replaced KWB #3R		2	3345.20		33.66				SA	SA	SA	-	SA	SA	A	A	A
KWB #4	Monitoring	S Refinery	N of US82, W of BR	Feb-92	2	3368.33	3365.40	40.74	20 to 39	stickup	Y	SA	No analytical samples to be collected							
KWB #5	Monitoring	S Refinery	N of US82, W of BR	Feb-92	2	3363.02	3360.60	37.55	24.7 to 38.7	stickup	Y	SA	No analytical samples to be collected							
KWB #6	Monitoring	S Refinery	N of US82, W of BR	Feb-92	2	3358.71	3356.10	36.27	17.5 to 36.5	stickup	Y	SA	No analytical samples to be collected							
KWB #7	Monitoring	Downgradient	N of US82, between BR & Dirt Rd	Feb-92	2	3344.14	3341.60	34.84	18 to 32	stickup		SA	SA	SA	-	SA	SA	A	A	A
KWB #8	Monitoring	Field E of Refinery	N of US82, between BR & Dirt Rd	Feb-92	2	3348.59	3345.80	37.50	15 to 34	stickup		SA	SA	SA	SA	SA	SA	A	A	A
KWB #9	Monitoring	Downgradient	S of US82, E of BR	Feb-92	2	3352.67	3349.80	37.48	20 to 34	stickup		SA	SA	SA	-	SA	SA	A	A	A
KWB #10	Monitoring	Downgradient	S of ED, N of US82	Oct-92	4	3355.07	--	49.00	35.5 to 49.5	stickup		SA	SA	SA	-	SA	SA	A	A	A
KWB #11A	Monitoring	Downgradient	N of US82, between BR & Dirt Rd	Oct-92	4	3346.09	--	42.24	30 to 39.5	stickup		SA	SA	SA	-	SA	SA	A	A	A
KWB #11B	Monitoring	Downgradient	N of US82, between BR & Dirt Rd	Oct-92	4	3346.88	--	72.40	50 to 69.5	stickup		SA	No analytical samples to be collected							
KWB #12A	Monitoring	Downgradient	S of US82, E of BR	Oct-92	4	3349.65	--	25.07	15.5 to 24.5	stickup		SA	A	A	-	A	A	A	A	A
KWB #12B	Monitoring	Downgradient	S of US82, E of BR	Oct-92	4	--	--	39.43	25.5 to 39.5	stickup		SA	No analytical samples to be collected							
KWB #13	Monitoring	Crossgradient	S of US82, W of BR		2	3366.84		33.16				SA	A	A	-	A	A	A	A	A
KWB #P2	Monitoring	Downgradient	E of Dirt Rd, N of US82		2	3337.28		33.62				SA	A	A	-	A	A	A	A	A
KWB #P3	Monitoring	Downgradient	Art Prod Line		2			29.13				Not included in monitoring program due to distance from impacts								
KWB #P4	Monitoring	Downgradient	Haines House		2			30.14				Not included in monitoring program due to distance from impacts								
KWB #P5	Monitoring	Downgradient	N of US82, E of BR - destroyed by road work									Drop from monitoring program, well destroyed by road work								
MW #1R	Monitoring	EP	W of the EPs		2	3311.93		20.80				SA	A	A	-	A	A	A	A	A
MW #2A	Monitoring	EP	W of the EPs		2	3309.82		17.28				SA	SA	SA	SA	SA	SA	A	A	A
MW #2B	Monitoring	EP	W of the EPs		2			24.98				SA	No analytical samples to be collected							
MW #3	Monitoring	EP	S of EP 1 & 2		2	3308.42		20.32				SA	A	A	A	A	A	A	A	A
MW #4A	Monitoring	EP	S of EP 1 & 2		4	3309.69		22.27				SA	SA	SA	SA	SA	SA	A	A	A
MW #4B	Monitoring	EP	S of EP 1 & 2		4			72.23				SA	No analytical samples to be collected							
MW #5A	Monitoring	EP	S of EP 2		2	3307.27		20.15				SA	SA	SA	SA	SA	SA	A	A	A
MW #5B	Monitoring	EP	S of EP 2	Dec-92	2	3306.18	3303.30	53.38	41.5 to 50.5	stickup		SA	No analytical samples to be collected							
MW #5C	Monitoring	EP	S of EP 2	Jan-95	2	3306.54	3303.70	71.79	59.25 to 68.75	stickup		SA	No analytical samples to be collected							
MW #6A	Monitoring	EP	S of EP 1		2	3310.67		19.10				SA	A	A	A	A	A	A	A	A
MW #6B	Monitoring	EP	S of EP 1		2			52.33				SA	No analytical samples to be collected							
MW #7A	Monitoring	EP	S of EP 3		2	3306.15		17.31				SA	SA	SA	SA	SA	SA	A	A	A
MW #7B	Monitoring	EP	S of EP 3		4			52.53				SA	No analytical samples to be collected							
MW #8	Monitoring	TMD	S of ED between BR & HR	Jun-86	2	3335.31	--	20.33	--	--		SA	A	A	-	A	A	A	A	A
MW #9	Monitoring	TMD	S of ED between BR & HR	Jun-86	2	3335.18	--	20.18	--	--		SA	No analytical samples to be collected							
MW #10	Monitoring	Downgradient	S of EPs		2	3310.30		18.79				SA	SA	SA	SA	SA	SA	A	A	A
MW #11A	Monitoring	EP	NE of EP 6		4	3307.46		21.40				SA	A	A	A	A	A	A	A	A
MW #11B	Monitoring	EP	NE of EP 6		2			47.18				SA	No analytical samples to be collected							
MW #12	Monitoring	EP	N of OCD #1		4			10.48				SA	Not included in monitoring program due to location (north of river)							
MW #13	Monitoring	EP	N of EP 1		4			20.99				SA	Not included in monitoring program due to location (north of river)							
MW #14	Monitoring	EP	E of OCD #7		4			11.89				SA	Not included in monitoring program due to location (north of river)							
MW #15	Monitoring	EP	W of EP 1		4	3310.93		21.68				SA	A	A	A	A	A	A	A	A
MW #16	Monitoring	TMD	E of HR, N of ED		4	3314.77		21.22				SA	A	A	-	A	A	A	A	A
MW #17	Monitoring	Crossgradient	NE of Artesia POTW		4			34.45				Not included in monitoring program due to distance from impacts								
MW #18	Monitoring	NCL	N Refinery, E of NCL	Jun-82	8	3364.13	--	22.30	15 to 19	--		SA	SA	SA	-	SA	SA	A	A	A
MW #18A	Monitoring	EP	S of EPs		4	3305.36		22.52				SA	SA	SA	-	SA	SA	A	A	A

Table 1
Proposed Monitoring Program and Schedule
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	Location Information		Well Construction Information [a]							PSH Expected? [b]	Gauging Frequency	Analytical Suite and Frequency [c]							
		Associated Area of Concern	Approximate Location	Date Installed	Diameter (in)	Top of Casing (ft MSL)	Ground Surface (ft MSL)	Total Depth (ft btoc)	Screen Interval (ft bgs)	Surface Finish			Purge Parameters	DRO	GRO	VOCs	Metals	Cations/ Anions	Nitrates / Nitrites as Nitrogen	Total Dissolved Solids
MW #18B	Monitoring	EP	S of EPs		2		3305.99	50.45				SA	No analytical samples to be collected							
MW #18T	Monitoring	EP	S of EPs		4			50.75				SA	No analytical samples to be collected							
MW #19	Monitoring	NCL	S of NCL		2			21.97				SA	No analytical samples to be collected							
MW #20	Monitoring	TMD	E of BR, S of ED	Jan-93	4	3340.69	3337.20	26.88	9.5 to 23.5	stickup		SA	A	A	-	A	A	A	A	A
MW #21	Monitoring	TMD	S of ED between BR & HR	Jan-93	4	3336.39	3333.50	25.10	7.5 to 22	stickup		SA	A	A	-	A	A	A	A	A
MW #22A	Monitoring	EP	S of EPs		4	3304.30		22.60				SA	SA	SA	SA	SA	SA	A	A	A
MW #22B	Monitoring	EP	S of EPs		2			54.54				SA	No analytical samples to be collected							
MW #23	Monitoring	N Refinery	W of TEL	Jun-82	6	3365.10	3363.00	19.18	15 to 20	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #24	Monitoring	EP	E of OCD #6	Jul-82	6	--	3362.00	23.41	15 to 20	--		SA	Not included in monitoring program due to location (north of river)							
MW #25	Monitoring	TMD / EP	S of ED, E of HR	Jan-95	2	3310.32	3308.40	28.05	15.75 to 25.25	stickup		SA	A	A	-	A	A	A	A	A
MW #26	Monitoring	TMD	S of ED, E of HR	Jan-95	2	3314.30	3311.40	27.55	15.25 to 24.25	stickup		SA	A	A	-	A	A	A	A	A
MW #27	Monitoring	TMD	E of HR, S of ED	Jan-95	2	3320.13	3318.20	30.25	18.25 to 27.75	stickup		SA	A	A	-	A	A	A	A	A
MW #28	Monitoring	S Refinery	E of SE Tankfarm	Jul-82	6	3363.73	3361.00	34.10	25 to 30	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #29	Monitoring	N Refinery	N of TEL	Jan-95	2	3364.55	3331.60	21.80	9.75 to 19.25	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #30	Monitoring	N Refinery / TMD	W of BR		8			21.35				SA	No analytical samples to be collected							
MW #39	Monitoring	N Refinery	N of TEL	Jun-84	2	3361.07	--	25.34	14 to 24	stickup	Y	SA	No analytical samples to be collected							
MW #40	Monitoring	N Refinery	N of TEL		2			24.81				SA	A	A	A	A	A	A	A	A
MW #41	Monitoring	N Refinery	N of TEL	Jun-84	2	3361.53	--	22.52	14 to 19	stickup		SA	A	A	A	A	A	A	A	A
MW #42	Monitoring	N Refinery	N of TEL		2	3362.55		23.40				SA	A	A	A	A	A	A	A	A
MW #43	Monitoring	N Refinery	NW of TEL	Jul-84	6	3362.80	--	21.23	15.5 to 20.5	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #45	Monitoring	N Refinery / TMD	E of Refinery, S of ED	Aug-84	2	3356.92	--	15.82	10.5 to 15.5	stickup		SA	SA	SA	-	SA	SA	A	A	A
MW #46	Monitoring	N Refinery / TMD	E of Refinery, S of ED	Aug-84	2	3356.92	--	19.83	12 to 17	stickup		SA	SA	SA	-	SA	SA	A	A	A
MW #48	Monitoring	S Refinery	S of SE Tankfarm		2	3366.14		32.38			Y	SA	No analytical samples to be collected							
MW #49	Monitoring	Central Refinery	E Refinery, midway from ED to US82		2	3362.93		33.03				SA	SA	SA	SA	SA	SA	A	A	A
MW #50	Monitoring	Central Refinery	W of Refinery, E of US285, N of US 82		2	3374.21		28.28				SA	SA	SA	-	SA	SA	A	A	A
MW #52	Monitoring	S Refinery	S of Refinery & US82		2	3371.67		34.46				SA	SA	SA	SA	SA	SA	A	A	A
MW #53	Monitoring	Upgradient	W of Refinery, E of rail		2	3367.87		23.87				SA	A	A	-	A	A	A	A	A
MW #54A	Monitoring	NCL	NW of NCL		2	3365.66		31.29				SA	SA	SA	-	SA	SA	A	A	A
MW #54B	Monitoring	NCL	NW of NCL		2			47.45				SA	No analytical samples to be collected							
MW #55	Monitoring	N Refinery	E of NCL		2	3363.97		26.82				SA	SA	SA	SA	SA	SA	A	A	A
MW #56	Monitoring	N Refinery / TMD	NE of Refinery		2	3362.05		26.10				SA	A	A	-	A	A	A	A	A
MW #57	Monitoring	Downgradient	S BR		2			PUMP			Y	SA	No analytical samples to be collected							
MW #58	Monitoring	Downgradient	S of US82, W of BR		4			33.14				SA	SA	SA	-	SA	SA	A	A	A
MW #59	Monitoring	N Refinery	Boneyard		2			29.67				SA	A	A	A	A	A	A	A	A
MW #60	Monitoring	N Refinery	Boneyard		2			34.30				SA	SA	SA	SA	SA	SA	A	A	A
MW #61	Monitoring	N Refinery	SW of TEL	Apr-05	4	3362.42		29.10	14 to 29	flush mount		SA	A	A	A	A	A	A	A	A
MW #62	Monitoring	N Refinery	SW of TEL	Apr-05	4			31.94	14 to 29	flush mount		SA	SA	SA	SA	SA	SA	A	A	A
MW #63	Monitoring	N Refinery	SW of TEL	Apr-05	4			0.00	14 to 29	flush mount		SA	A	A	A	A	A	A	A	A
MW #64	Monitoring	S Refinery	SW of SE Tankfarm	Apr-05	4			34.16	15 to 30	flush mount	Y	SA	No analytical samples to be collected							
MW #65	Monitoring	S Refinery	S of SE Tankfarm	Apr-05	4			29.35	14.5 to 29.5	flush mount	Y	SA	No analytical samples to be collected							
MW #66	Monitoring	S Refinery	E of SE Tankfarm	Apr-05	4			29.67	14.6 to 29.6	flush mount		SA	SA	SA	SA	SA	SA	A	A	A
MW #67	Monitoring	N Refinery	E of Diesel Tank Farm	Apr-05	4			27.18	12 to 27	flush mount		SA	SA	SA	SA	SA	SA	A	A	A
MW #68	Monitoring	TMD	S of ED, between HR & Dirt Rd		2	3334.29		26.74				SA	A	A	-	A	A	A	A	A
MW #69	Monitoring	EP	N River, formerly MW #23		2	3334.29		10.88				SA	Not included in monitoring program due to location (north of river)							
MW #70	Monitoring	EP	S of EPs, formerly MW #19		4	3303.09		22.03				SA	SA	SA	SA	SA	SA	A	A	A
MW #71	Monitoring	TMD	S of ED, formerly MW #29		2	3303.09		21.78				SA	SA	SA	-	SA	SA	A	A	A
MW #72	Monitoring	EP	EP 6	Mar-07	4	3308.04	3305.30	13.88	2 to 12	stickup		SA	SA	SA	SA	SA	SA	A	A	A

Table 1
Proposed Monitoring Program and Schedule
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	Location Information		Well Construction Information [a]							PSH Expected? [b]	Gauging Frequency	Analytical Suite and Frequency [c]							
		Associated Area of Concern	Approximate Location	Date Installed	Diameter (in)	Top of Casing (ft MSL)	Ground Surface (ft MSL)	Total Depth (ft btoc)	Screen Interval (ft bgs)	Surface Finish			Purge Parameters	DRO	GRO	VOCs	Metals	Cations/ Anions	Nitrates / Nitrites as Nitrogen	Total Dissolved Solids
MW #73	Monitoring	EP	EP 3	Mar-07	4	3309.65	3307.21	19.55	2 to 17	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #74	Monitoring	EP	EP 2	Mar-07	4	3309.44	3307.09	20.11	2 to 17	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #75	Monitoring	EP	EP 2	Mar-07	4	3309.63	3307.16	23.64	3 to 18	stickup		SA	A	A	A	A	A	A	A	A
MW #76	Monitoring	EP	EP 2	Mar-07	4	3311.13	3308.49	20.27	3 to 18	stickup		SA	A	A	A	A	A	A	A	A
MW #77	Monitoring	EP	EP 2	Mar-07	4	3309.36	3307.00	20.45	3 to 18	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #78	Monitoring	EP	EP 2	Mar-07	4	3309.41	3306.99	19.53	2 to 17	stickup		SA	A	A	A	A	A	A	A	A
MW #79	Monitoring	EP	EP 5	Mar-07	4	3310.99	3308.49	19.21	2 to 17	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #80	Monitoring	EP	EP 5	Mar-07	4	3310.37	3308.02	20.82	2 to 17	stickup		SA	A	A	A	A	A	A	A	A
MW #81	Monitoring	EP	EP 5	Mar-07	4	3311.92	3309.42	18.61	2 to 17	stickup		SA	A	A	A	A	A	A	A	A
MW #82	Monitoring	EP	EP 1	Mar-07	4	3310.30	3308.07	19.98	2 to 17	stickup		SA	A	A	A	A	A	A	A	A
MW #83	Monitoring	EP	EP 1	Mar-07	4	3309.50	3307.01	19.87	2 to 17	stickup		SA	A	A	A	A	A	A	A	A
MW #84	Monitoring	EP	EP 1	Mar-07	4	3311.17	3308.97	20.44	2 to 17	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #85	Monitoring	EP	EP 1	Mar-07	4	3310.66	3308.30	20.27	3 to 18	stickup	Y	SA	No analytical samples to be collected							
MW #86	Monitoring	EP	EP 1	Mar-07	4	3310.65	3308.35	19.18	2 to 17	stickup	Y	SA	No analytical samples to be collected							
MW #87	Monitoring	EP	S of EPs	Mar-07	4	3310.65	3304.80	20.28	2 to 17	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #88	Monitoring	EP	S of EPs	Mar-07	4	3308.02	3305.51	20.27	3 to 18	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #89	Monitoring	TMD	S of ED, E of HR	Mar-07	4	3317.87	3315.52	20.20	2 to 17	stickup		SA	A	A	-	A	A	A	A	A
MW #90	Monitoring	N Refinery	S of Diesel Tankfarm	Jun-07	4	3368.75	3366.24	22.70	5 to 20	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #91	Monitoring	N Refinery	S of Diesel Tankfarm	Jun-07	4	3367.10	3365.21	25.26	7 to 22	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #92	Monitoring	N Refinery	S of ED, N of NAPI	Jun-07	4	3368.00	3365.79	22.58	5 to 20	stickup		SA	A	A	A	A	A	A	A	A
MW #93	Monitoring	N Refinery	S of ED, NE of NAPI	Jun-07	4	3363.18	3363.91	20.10	5 to 20	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #94	Monitoring	N Refinery	SE of Diesel Tankfarm, N of ED	Jul-07	4	3367.25	3364.31	23.80	5 to 20	stickup	Y	SA	No analytical samples to be collected							
MW #95	Monitoring	N Refinery	NE of Diesel Tankfarm	Jul-07	4	3368.05	3365.32	25.31	7 to 22	stickup		SA	A	A	A	A	A	A	A	A
MW #96	Monitoring	N Refinery	S of Diesel Tankfarm	Jul-07	4	3368.30	3366.12	25.42	7 to 22	flush mount		SA	A	A	A	A	A	A	A	A
MW #97	Monitoring	N Refinery	SE of NAPI	Jul-07	4	3365.08	3365.89	21.94	8 to 23	flush mount	Y	SA	No analytical samples to be collected							
MW #98	Monitoring	N Refinery	E of Former Diesel Storage Tank Area	Jul-07	4	3365.08	3362.26	26.66	13 to 23	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #99	Monitoring	S Refinery	NE of Loading Rack	Jul-07	4	3363.30	3361.25	28.26	12 to 27	stickup		SA	A	A	A	A	A	A	A	A
MW #100	Monitoring	S Refinery	SE corner of SE Tankfarm	Jul-07	4	3363.68	3364.10	30.48	9 to 24	flush mount	Y	SA	No analytical samples to be collected							
MW #101	Monitoring	S Refinery	E Loading Rack	Jul-07	4	3367.98	3365.64	26.66	8 to 23	stickup		SA	SA	SA	SA	SA	SA	A	A	A
MW #102	Monitoring	S Refinery	E West Firewater Pond	Jul-07	4	3371.37	3368.95	26.44	12 to 27	stickup	Y	SA	No analytical samples to be collected							
MW #103	Monitoring	S Refinery	Old Rail ROW	Aug-08	4			25.10	7 to 22	flush mount		SA	A	A	A	A	A	A	A	A
MW #104	Monitoring	S Refinery	Old Rail ROW	Aug-08	4			21.82	3 to 18	flush mount		SA	SA	SA	SA	SA	SA	A	A	A
MW #105	Monitoring	Central Refinery	W of Crude Tankfarm	Feb-09	4			17.14	8 to 18	flush mount	Y	SA	No analytical samples to be collected							
MW #106	Monitoring	Central Refinery	E of Crude Tankfarm	Feb-09	4			22.70	0 to 11	flush mount		SA	SA	SA	SA	SA	SA	A	A	A
MW #107	Monitoring	S Refinery	NE of SE Tankfarm	Feb-09	4			18.97	12 to 22	flush mount		SA	SA	SA	SA	SA	SA	A	A	A
MW #108	Monitoring	NCL	S of NCL	Jul-09	4			27.35	9 to 24	stickup		SA	SA	SA	-	SA	SA	A	A	A
NCL #31	Monitoring	NCL	NCL	Oct-82	2		--	20.10	13 to 18	stickup		SA	SA	SA	-	SA	SA	A	A	A
NCL #32	Monitoring	NCL	NCL	Oct-82	2	3363.72	--	17.80	17 to 22	stickup		SA	SA	SA	-	SA	SA	A	A	A
NCL #33	Monitoring	NCL	NCL	Oct-82	2	3364.74	--	20.49	13 to 18	stickup		SA	SA	SA	-	SA	SA	A	A	A
NCL #34	Monitoring	NCL	NCL	Oct-82	2	3364.74	--	19.24	16 to 21	stickup		SA	SA	SA	-	SA	SA	A	A	A
NCL #44	Monitoring	NCL	NCL		2	3363.23		21.58				SA	SA	SA	-	SA	SA	A	A	A
NCL #49	Monitoring	NCL	NCL		2	3369.87		32.18				SA	SA	SA	-	SA	SA	A	A	A
NP #1	Monitoring	TMD	S of ED, W of BR		2	3341.64		21.83				SA	SA	-	-	SA	-	A	A	A
NP #2	Monitoring	TMD	S of ED, E of BR	Jan-93	2	3342.09	3339.10	21.47	9.5 to 18.5	stickup		SA	No analytical samples to be collected							
NP #3	Monitoring	TMD	N of ED, NE of BR	Jan-93	2	3342.24	3339.40	21.88	9.5 to 18.5	stickup		SA	No analytical samples to be collected							
NP #4	Monitoring	TMD	NE of NP #3	Jan-93	2	3345.01	3342.10	36.97	24.5 to 33.5	stickup		SA	No analytical samples to be collected							
NP #5	Monitoring	Crossgradient	S of RR, N of ED, W of BR		2	3353.41		25.12				SA	A	A	-	A	A	A	A	A

Table 1
Proposed Monitoring Program and Schedule
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	Location Information		Well Construction Information [a]							PSH Expected? [b]	Gauging Frequency	Analytical Suite and Frequency [c]							
		Associated Area of Concern	Approximate Location	Date Installed	Diameter (in)	Top of Casing (ft MSL)	Ground Surface (ft MSL)	Total Depth (ft btoc)	Screen Interval (ft bgs)	Surface Finish			Purge Parameters	DRO	GRO	VOCs	Metals	Cations/ Anions	Nitrates / Nitrites as Nitrogen	Total Dissolved Solids
NP #6	Monitoring	TMD	S of ED, W of BR		2	3336.96		20.28				SA	No analytical samples to be collected							
NP #7	Monitoring	TMD	In Pecan Orchard, destroyed by landowner									Drop from monitoring program, destroyed by landowner								
NP #8	Monitoring	TMD	S of ED, E of HR		2			4.10				SA	No analytical samples to be collected							
NP #9	Monitoring	TMD	S of RR, N of ED, W of BR		2	3359.49		25.85				SA	No analytical samples to be collected							
OCD #1R	Monitoring	EP	NW of EP 6, replaced OCD-1		2	3311.11		23.83				SA	SA	SA	SA	SA	SA	A	A	A
OCD #2A	Monitoring	EP	N of EP 6		2	3310.99	3310.67	27.50				SA	SA	SA	SA	SA	SA	A	A	A
OCD #2B	Monitoring	EP	N of EP 6		2			50.30				SA	No analytical samples to be collected							
OCD #3	Monitoring	EP	NE of EP 6		2	3311.19		25.42				SA	SA	SA	SA	SA	SA	A	A	A
OCD #4	Monitoring	EP	NE of EP 6		2	3312.23		25.38				SA	SA	SA	SA	SA	SA	A	A	A
OCD #5	Monitoring	EP	NE of EP 6		2	3307.82		25.37				SA	SA	SA	SA	SA	SA	A	A	A
OCD #6	Monitoring	EP	E of EP 6		2	3309.93		26.73				SA	SA	SA	SA	SA	SA	A	A	A
OCD #7A	Monitoring	EP	SE of EP 6	Dec-92	4	3307.05	3304.50	21.22	5.5 to 19.5	3.5' stickup		SA	SA	SA	SA	SA	SA	A	A	A
OCD #7B	Monitoring	EP	SE of EP 6	Dec-92	2	3306.92	3303.10	56.73	43.5 to 52.5	3.5' stickup		SA	No analytical samples to be collected							
OCD #7C	Monitoring	EP	SE of EP 6	Jan-95	2	3306.92	3304.60	56.73	60.25 to 69.75	stickup		SA	No analytical samples to be collected							
OCD #8A	Monitoring	EP	SE of EP 3		2	3306.68		21.68				SA	SA	SA	SA	SA	SA	A	A	A
ODC #8B	Monitoring	EP	SE of EP 3		2			56.45				SA	No analytical samples to be collected							
TEL #1	Monitoring	TEL	E of TEL cap	May-90	2	3361.34	3359.70	26.90	13 to 23	stickup		SA	SA	SA	SA	SA	SA	A	A	A
TEL #2	Monitoring	TEL	E of TEL cap	May-90	2	3362.23	3359.90	27.08	13 to 23	stickup		SA	SA	SA	SA	SA	SA	A	A	A
TEL #3	Monitoring	TEL	E of TEL cap	May-90	2	3361.45	3359.20	27.18	13 to 23	stickup		SA	SA	SA	SA	SA	SA	A	A	A
TEL #4	Monitoring	TEL	W of TEL cap	May-90	2	3363.31	3360.90	27.17	13 to 23	stickup		SA	SA	SA	SA	SA	SA	A	A	A
UG #1	Monitoring	Upgradient	W of Refinery, James Street	Jul-08	4	3361.71		24.17	8 to 23	flush mount		Recommended to plug and abandon								
UG #2	Monitoring	Upgradient	W of Refinery, Roselawn	Jul-08	4	3369.07		29.23	15 to 30	flush mount		Recommended to plug and abandon								
UG #3R	Monitoring	Upgradient	W of Refinery, 7th Street	Sep-08	4	3372.84		38.54	17 to 37	flush mount		Recommended to plug and abandon								
Well	Irrigation	Offsite	S of US82							irrigation well		Drop from monitoring program based on historic data (no organic impacts) and lack of consistent access								
RA #313	Irrigation	S Refinery	N of US82, W of BR		10					irrigation well		NA	A	-	-	A	-	A	A	A
RA #314	Irrigation	S Refinery	N of US82, W of BR		10					irrigation well		NA	A	-	-	A	-	A	A	A
RA #3156	Irrigation	Downgradient	S of US82, E of BR		10					irrigation well		NA	A	-	-	A	-	A	A	A
RA #3353	Irrigation	Downgradient	S of US82, E of BR, electricity disconnected 2009		10					irrigation well		Drop from monitoring program since electricity has been cut and well is inoperable								
RA #3723	Irrigation	S Refinery	N of US82, W of BR, inoperable in 2009		10					irrigation well		Drop from monitoring program since well is inoperable								
RA #4196	Irrigation	Field E of Refinery	N of US82, E of BR		10					irrigation well		NA	A	-	-	A	-	A	A	A
RA #4798	Irrigation	Field E of Refinery	E of BR, N of US82		10					irrigation well		NA	A	-	-	A	-	A	A	A
RW #1	Recovery [d]	N Refinery	S of ED, NW portion of Refinery		36			18.55		recovery well	Y	SA	No analytical samples to be collected							
RW #2	Recovery [d]	N Refinery	S of ED, NW portion of Refinery		36			19.25		recovery well	Y	SA	No analytical samples to be collected							
RW #3	Recovery [d]	N Refinery	Between ED and TEL, backfilled		36			0.00		recovery well		Backfilled, inoperable								
RW #4	Recovery [d]	S Refinery	NW of SE Tankfarm		36			21.02		recovery well		SA	A	A	-	A	A	A	A	A
RW #5	Recovery [d]	S Refinery	SE Tankfarm		36			17.20		recovery well	Y	SA	No analytical samples to be collected							
RW #6	Recovery [d]	S Refinery	W of SE Tankfarm		36			16.87		recovery well	Y	SA	No analytical samples to be collected							
RW #7	Recovery [d]	N Refinery	N of ED, NW portion of Refinery		36			20.77		recovery well		SA	A	A	A	A	A	A	A	A
RW #8	Recovery [d]	N Refinery	N of ED, S of NCL		36			16.35		recovery well	Y	SA	No analytical samples to be collected							
RW #9	Recovery [d]	N Refinery	N of TEL		36			21.79		recovery well		SA	A	A	A	A	A	A	A	A
RW #10	Recovery [d]	N Refinery	N of TEL		36			23.86		recovery well		SA	A	A	A	A	A	A	A	A
RW #11	Recovery [d]	S Refinery	S of US82, W side of BR		36			23.02		recovery well		SA	A	A	-	A	A	A	A	A
RW #12	Recovery [d]	Field E of Refinery	N of US 82, W of BR		36			22.89		recovery well	Y	SA	No analytical samples to be collected							
RW #13	Recovery [d]	Field E of Refinery	N of US 82, W of BR		36			25.12		recovery well	Y	SA	No analytical samples to be collected							
RW #14	Recovery [d]	Field E of Refinery	N of US 82, W of BR		36			23.60		recovery well	Y	SA	No analytical samples to be collected							
RW #15	Recovery [d]	S Refinery	S of SE Tankfarm		36			22.04		recovery well	Y	SA	No analytical samples to be collected							

Table 1
Proposed Monitoring Program and Schedule
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	Location Information		Well Construction Information [a]							PSH Expected? [b]	Gauging Frequency	Analytical Suite and Frequency [c]							
		Associated Area of Concern	Approximate Location	Date Installed	Diameter (in)	Top of Casing (ft MSL)	Ground Surface (ft MSL)	Total Depth (ft btoc)	Screen Interval (ft bgs)	Surface Finish			Purge Parameters	DRO	GRO	VOCs	Metals	Cations/ Anions	Nitrates / Nitrites as Nitrogen	Total Dissolved Solids
RW #16	Recovery [d]	N Refinery / TMD	NE of Refinery, S of ED		36			17.60		recovery well		SA	A	A	-	A	A	A	A	A
RW #17	Recovery [d]	N Refinery	N of ED, E of NCL		36			16.28		recovery well		SA	A	A	A	A	A	A	A	A
RW #18	Recovery [d]	Field E of Refinery	S of ED, W of BR		36			18.82		recovery well		SA	A	-	-	A	A	A	A	A

Abbreviations and Definitions

A = Annual
BR = Bolton Road
DRO = Diesel Range Organics
E = East
EP = Evaporation Ponds
ft bgs = feet below ground surface
ft btoc = feet below top of casing
ft MSL = feet Mean Sea Level
GRO = Gasoline Range Organics
HR = Haldeman Road
in = inches
N = North
NA = Not accessible
NAPI = North API Separator
NCL = North Colony Landfarm
NE = Northeast
NS = Not surveyed yet
NW = Northwest
OCD = Oil Conservation District
PSH = Phase Separated Hydrocarbons
ROW = right of way
RR = Richey Road
S = South
SA = Semi-annual
SE = Southeast
SW = Southwest
TMD = Three Mile Ditch
TEL = Tetra Ethyl Lead Impoundment
UG = Upgradient
US285 = U.S. Highway 285
US82 = U.S. Highway 82
VOCs = Volatile Organic Compounds
W = West
Y = Yes, based on 9/2009 gauging data

Footnotes:

[a] Well construction information provided where available. Total depth based on 9/2009 measurements.

[b] PSH was present during September 2009 gauging event.

[c] Analytical Suite to include the following:

1. Purge parameters to be measured and recorded in the field will include pH, temperature, specific conductivity, dissolved oxygen, and oxygen-reduction potential.
2. DRO by Method 8015Mod.
3. GRO by Method 8015Mod.
4. VOCs by Method 8260, to include methyl tert butyl ether (MTBE).
5. Metals to include Arsenic, Barium, Chromium, Lead and Selenium by Method 6010 or 6020.
6. Cations/anions to include CalciumPotassium, and Sodium by Method 6010 or 6020 as well as Sulfate, Chloride and Fluoride by Method 300.
7. Nitrates/Nitrites as Nitrogen by Method 300.
8. Total Dissolved Solids by Method 2540C.

"-" indicates parameter not required.

Note - samples will not be collected from any well where PSH is present.

[d] Recovery wells to be gauged monthly. Samples to be collected only if PSH not present.

Table 2
Summary of Monitoring Program Changes
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	2006 Monitoring Plan [a]								Proposed Monitoring Plan									Comments
	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	RCRA Metals	Cations/Anions	Nitrates/Nitrites	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	As, Ba, Cr, Pb, Se	Cations/Anions	Nitrates/Nitrites	TDS	
KWB #1A	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
KWB #1B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
KWB #1C	SA	SA	SA	--	--	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well completed in lower aquifer, no historic impacts, cease monitoring
KWB #2R	SA	SA	SA	SA	--	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
KWB #3AR	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
KWB #4	SA	SA	SA	SA	--	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
KWB #5	SA	SA	SA	SA	--	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
KWB #6	SA	SA	SA	SA	--	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
KWB #7	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
KWB #8	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add GRO, TDS
KWB #9	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
KWB #10	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
KWB #11A	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
KWB #11B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
KWB #12A	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Cross-gradient well with no recent exceedances, reduce to annual sampling
KWB #12B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
KWB #13	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Cross-gradient well with no recent exceedances, reduce to annual sampling
KWB #P2	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Downgradient well beyond other "clean" downgradient well, reduced frequency
KWB #P3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well not included in current program, too far downgradient, recommend abandonment
KWB #P4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well not included in current program, too far downgradient, recommend abandonment
KWB #P5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well covered by road crew, recommend abandonment if locatable
MW #1R	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Upgradient well, reduced frequency
MW #2A	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #2B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #3	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #4A	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #4B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #5A	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #5B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #5C	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement

Table 2
Summary of Monitoring Program Changes
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	2006 Monitoring Plan [a]								Proposed Monitoring Plan									Comments
	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	RCRA Metals	Cations/Anions	Nitrates/Nitrites	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	As, Ba, Cr, Pb, Se	Cations/Anions	Nitrates/Nitrites	TDS	
MW #6A	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #6B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #7A	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #7B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #8	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Well in cluster of other wells, no hydrocarbon impacts, reduced frequency
MW #9	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #10	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #11A	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	A	A	A	A	A	Interiror of EP area, no recent hydrocarbon impacts, reduced frequency
MW #11B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #12	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #13	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #14	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #15	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	A	A	A	A	A	Upgradient well, reduced frequency
MW #16	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Well north of Eagle Creek, no hydrocarbon impacts, reduced frequency
MW #17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Cross-gradient well far outside area of impacts, recommend abandonment
MW #18	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS; Drop GRO
MW #18A	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #18B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #18T	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #19	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #20	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Well along TMD, no hydrocarbon impacts, reduced frequency
MW #21	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Well in cluster of other wells, no hydrocarbon impacts, reduced frequency
MW #22A	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #22B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #23	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add GRO, TDS
MW #24	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #25	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Well along TMD, no hydrocarbon impacts, reduced frequency
MW #26	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Well along TMD, no hydrocarbon impacts, reduced frequency
MW #27	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Well along TMD, no hydrocarbon impacts, reduced frequency
MW #28	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add GRO, TDS

Table 2
Summary of Monitoring Program Changes
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	2006 Monitoring Plan [a]								Proposed Monitoring Plan									Comments
	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	RCRA Metals	Cations/Anions	Nitrates/Nitrites	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	As, Ba, Cr, Pb, Se	Cations/Anions	Nitrates/Nitrites	TDS	
MW #29	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add GRO, TDS
MW #30	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #39	SA	SA	SA	SA	--	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #40	--	--	--	--	--	--	--	--	SA	A	A	A	A	A	A	A	A	Well north of TEL, east of RW #9 not sampled in recent years, added to program
MW #41	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	A	A	A	A	A	Well upgradient of RW #9, reduced frequency, added GRO
MW #42	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	A	A	A	A	A	Well upgradient of RW #9, reduced frequency, added GRO
MW #43	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #45	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #46	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #48	SA	SA	SA	SA	--	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #49	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #50	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #52	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add GRO, TDS
MW #53	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Upgradient well, reduced frequency
MW #54A	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #54B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #55	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add GRO, TDS
MW #56	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Well in cluster of other wells, reduced frequency
MW #57	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #58	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #59	--	--	--	--	--	--	--	--	SA	A	A	A	A	A	A	A	A	Well downgradient of TEL and refinery, not sampled recently, added to program
MW #60	--	--	--	--	--	--	--	--	SA	SA	SA	SA	SA	SA	A	A	A	Well downgradient of TEL and refinery, not sampled recently, added to program
MW #61	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #62	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #63	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #64	SA	SA	SA	SA	SA	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #65	SA	SA	SA	SA	SA	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #66	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #67	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #68	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	--	A	A	A	A	Well along TMD, no hydrocarbon impacts, reduced frequency

Table 2
Summary of Monitoring Program Changes
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	2006 Monitoring Plan [a]								Proposed Monitoring Plan									Comments
	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	RCRA Metals	Cations/Anions	Nitrates/Nitrites	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	As, Ba, Cr, Pb, Se	Cations/Anions	Nitrates/Nitrites	TDS	
MW #69	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
MW #70	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #71	b	b	b	b	b	b	b	b	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #72	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #73	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #74	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #75	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #76	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #77	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #78	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #79	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #80	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #81	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #82	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #83	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #84	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #85	b	b	b	b	b	b	b	b	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #86	b	b	b	b	b	b	b	b	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #87	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #88	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #89	b	b	b	b	b	b	b	b	SA	A	A	A	--	A	A	A	A	Well along TMD, no hydrocarbon impacts, reduced frequency
MW #90	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #91	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #92	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #93	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #94	b	b	b	b	b	b	b	b	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #95	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #96	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #97	b	b	b	b	b	b	b	b	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #98	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS

Table 2
Summary of Monitoring Program Changes
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	2006 Monitoring Plan [a]								Proposed Monitoring Plan									Comments
	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	RCRA Metals	Cations/Anions	Nitrates/Nitrites	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	As, Ba, Cr, Pb, Se	Cations/Anions	Nitrates/Nitrites	TDS	
MW #99	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #100	b	b	b	b	b	b	b	b	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #101	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #102	b	b	b	b	b	b	b	b	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #103	b	b	b	b	b	b	b	b	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency
MW #104	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #105	b	b	b	b	b	b	b	b	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
MW #106	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #107	b	b	b	b	b	b	b	b	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
MW #108	b	b	b	b	b	b	b	b	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
NCL #31	--	--	--	--	--	--	--	--	SA	SA	SA	SA	--	SA	A	A	A	Well southwest of NCL has not been sampled in last several years, added to program
NCL #32	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
NCL #33	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
NCL #34	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
NCL #44	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
NCL #49	SA	SA	SA	SA	--	SA	SA	SA	SA	SA	SA	SA	--	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
NP #1	SA	SA	SA	--	--	--	--	--	SA	SA	SA	--	--	--	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
NP #2	SA	SA	SA	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well outside impacted area, removed from analytical program
NP #3	SA	SA	SA	SA	--	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well outside impacted area, removed from analytical program
NP #4	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
NP #5	SA	SA	SA	SA	--	SA	SA	SA	SA	A	A	A	--	A	A	A	A	No recent hydrocarbon impacts, reduced frequency
NP #6	SA	SA	SA	SA	--	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well outside impacted area, removed from analytical program
NP #7	SA	SA	SA	SA	--	SA	SA	SA	--	--	--	--	--	--	--	--	--	Well destroyed by landowner, recommend abandonment if locatable
NP #8	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
NP #9	SA	SA	SA	SA	--	SA	SA	SA	SA	--	--	--	--	--	--	--	--	Well outside impacted area, removed from analytical program
OCD #1R	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
OCD #2A	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
OCD #2B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
OCD #3	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
OCD #4	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS

Table 2
Summary of Monitoring Program Changes
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	2006 Monitoring Plan [a]								Proposed Monitoring Plan									Comments
	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	RCRA Metals	Cations/Anions	Nitrates/Nitrites	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	As, Ba, Cr, Pb, Se	Cations/Anions	Nitrates/Nitrites	TDS	
OCD #5	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
OCD #6	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
OCD #7A	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
OCD #7B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
OCD #7C	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
OCD #8A	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
ODC #8B	--	--	--	--	--	--	--	--	SA	--	--	--	--	--	--	--	--	Well historically gauged only, proposed plan updated to include as requirement
TEL #1	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
TEL #2	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
TEL #3	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
TEL #4	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	A	A	A	Reduced frequency of Cations/Anions & Nitrates/Nitrites; Add TDS
UG #1	b	b	b	b	b	b	b	b	--	--	--	--	--	--	--	--	--	Recommended to be abandoned, will not be sampled
UG #2	b	b	b	b	b	b	b	b	--	--	--	--	--	--	--	--	--	Recommended to be abandoned, will not be sampled
UG #3R	b	b	b	b	b	b	b	b	--	--	--	--	--	--	--	--	--	Recommended to be abandoned, will not be sampled
Well	SA	SA	SA	--	--	--	SA	SA	--	--	--	--	--	--	--	--	--	Frequently no access, no historic impacts, remove from program
RA #313	SA	SA	SA	--	--	--	SA	SA	NA	A	A	--	--	--	A	A	A	No gauging possible on irrigation wells, reduced frequency of monitoring
RA #314	SA	SA	SA	--	--	--	SA	SA	NA	A	A	--	--	--	A	A	A	No gauging possible on irrigation wells, reduced frequency of monitoring
RA #3156	SA	SA	SA	--	--	--	SA	SA	NA	A	A	--	--	--	A	A	A	No gauging possible on irrigation wells, reduced frequency of monitoring
RA #3353	SA	SA	SA	--	--	--	SA	SA	--	--	--	--	--	--	--	--	--	Landowner has removed pump and power, remove from program
RA #3723	SA	SA	SA	--	--	--	SA	SA	--	--	--	--	--	--	--	--	--	Landowner has removed pump and power, remove from program
RA #4196	SA	SA	SA	--	--	--	SA	SA	NA	A	A	--	--	--	A	A	A	No gauging possible on irrigation wells, reduced frequency of monitoring
RA #4798	SA	SA	SA	--	--	--	SA	SA	NA	A	A	--	--	--	A	A	A	No gauging possible on irrigation wells, reduced frequency of monitoring
RW #1	A	A	A	--	--	A	A	A	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
RW #2	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
RW #3	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	--	--	--	--	--	--	--	--	--	Recovery well backfilled and not accessible, remove from program
RW #4	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	A	A	A	--	A	A	A	A	Interior of dissolved phase plume, reduced frequency, sample only if no PSH
RW #5	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
RW #6	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
RW #7	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency, sample only if no PSH
RW #8	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present

Table 2
Summary of Monitoring Program Changes
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	2006 Monitoring Plan [a]								Proposed Monitoring Plan									Comments
	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	RCRA Metals	Cations/Anions	Nitrates/Nitrites	Gauging Frequency	Purge Parameters	VOCs	DRO	GRO	As, Ba, Cr, Pb, Se	Cations/Anions	Nitrates/Nitrites	TDS	
RW #9	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency, sample only if no PSH
RW #10	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency, sample only if no PSH
RW #11	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	A	A	A	--	A	A	A	A	Interior of dissolved phase plume, reduced frequency, sample only if no PSH
RW #12	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
RW #13	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
RW #14	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
RW #15	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	--	--	--	--	--	--	--	--	Well contains PSH, will not be sampled if PSH present
RW #16	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	A	A	A	--	A	A	A	A	Interior of dissolved phase plume, reduced frequency, sample only if no PSH
RW #17	SA	SA[c]	SA[c]	--	--	SA[c]	SA[c]	SA[c]	SA	A	A	A	A	A	A	A	A	Interior of dissolved phase plume, reduced frequency, sample only if no PSH
RW #18	A	A	A	--	--	A	A	A	SA	A	A	--	--	A	A	A	A	Interior of dissolved phase plume, reduced frequency, sample only if no PSH

Notes and Abbreviations

[a] Requirements of 2006 Sampling Plan. Additional gauging and sample analyses have been performed historically.

[b] Wells installed after 2006 monitoring plan sampled semiannually for constituents based on associated workplan.

[c] 2006 monitoring plan required recovery wells to be sampled if no measurable phase-separated hydrocarbons were present.

Purge Parameters to include pH, temperature, specific conductance, dissolved oxygen and oxygen-reduction potential

-- = not required

A = Annually

As = Arsenic

Ba = Barium

Cr = Chromium

DRO = Diesel Range Organics

GRO = Gasoline Range Organics

Pb = Lead

PSH = Phase Separated Hydrocarbons

SA = Semiannually

Se = Selenium

TDS = Total Dissolved Solids

TEL = Tetra ethyl lead impoundment area

TMD = Three Mile Ditch

VOCs = Volatile Organic Compounds

CITY: MID-TX DIV 85/GROUP: ENV DB: HC LD: PIC: PM: SH TM: LYR: ON=*;OFF=*REF* UN: 31-009-00403
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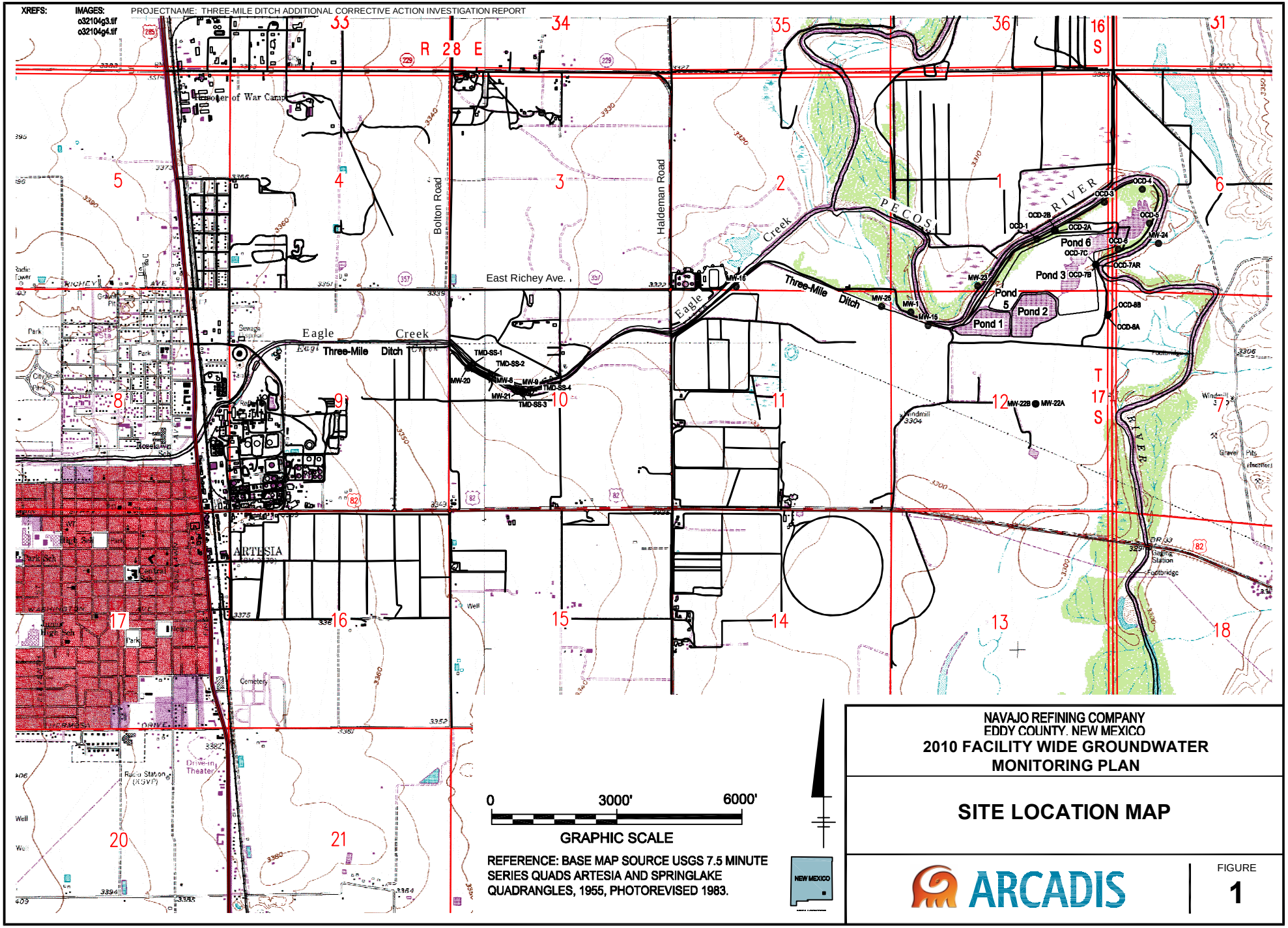
XREFS: IMAGES: o32104g3.tif o32104g4.tif

PROJECTNAME: THREE-MILE DITCH ADDITIONAL CORRECTIVE ACTION INVESTIGATION REPORT



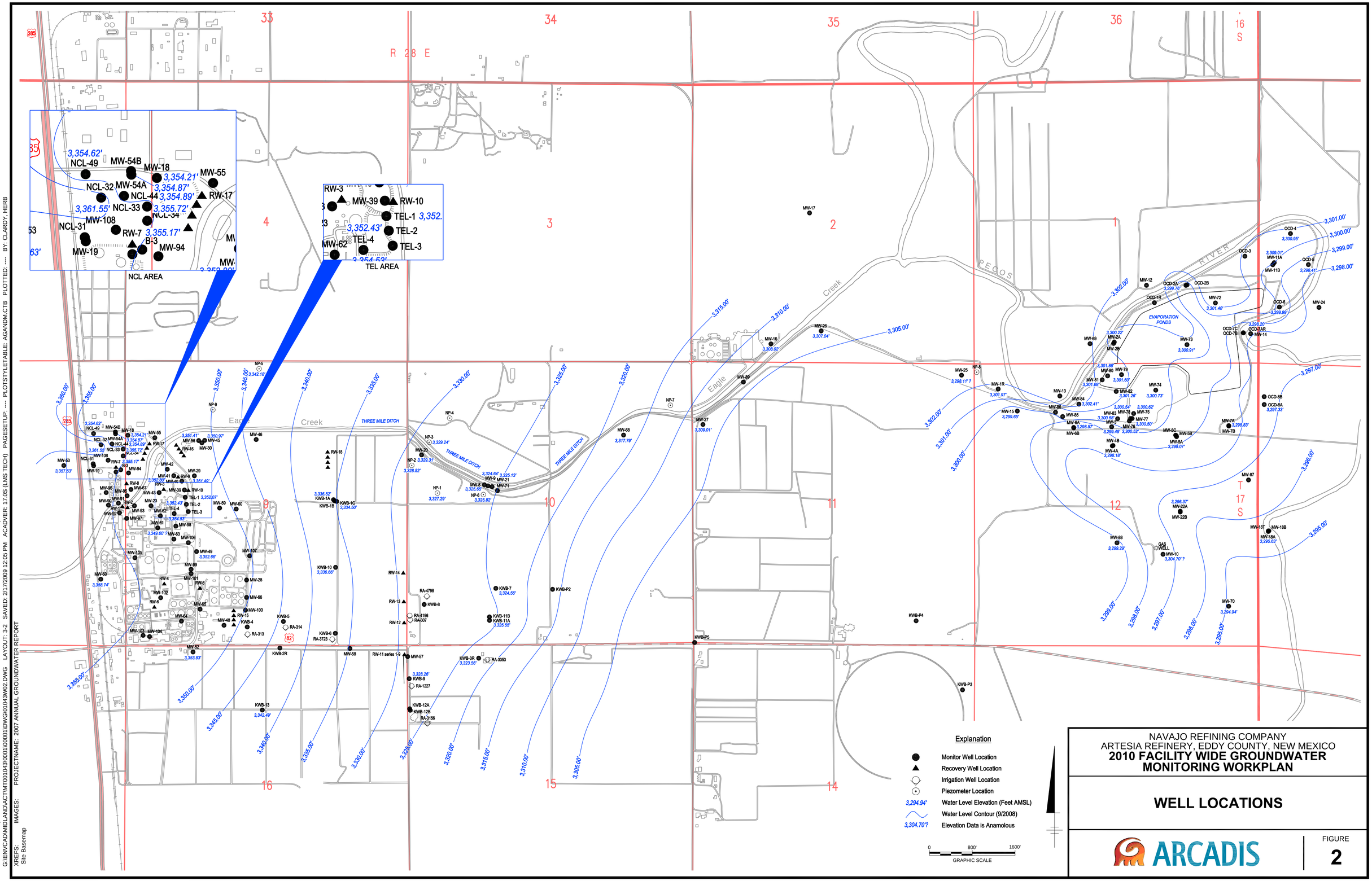
REFERENCE: BASE MAP SOURCE USGS 7.5 MINUTE SERIES QUADS ARTESIA AND SPRINGLAKE QUADRANGLES, 1955, PHOTOREVISED 1983.

NAVAJO REFINING COMPANY
EDDY COUNTY, NEW MEXICO
2010 FACILITY WIDE GROUNDWATER MONITORING PLAN

SITE LOCATION MAP

ARCADIS

FIGURE 1



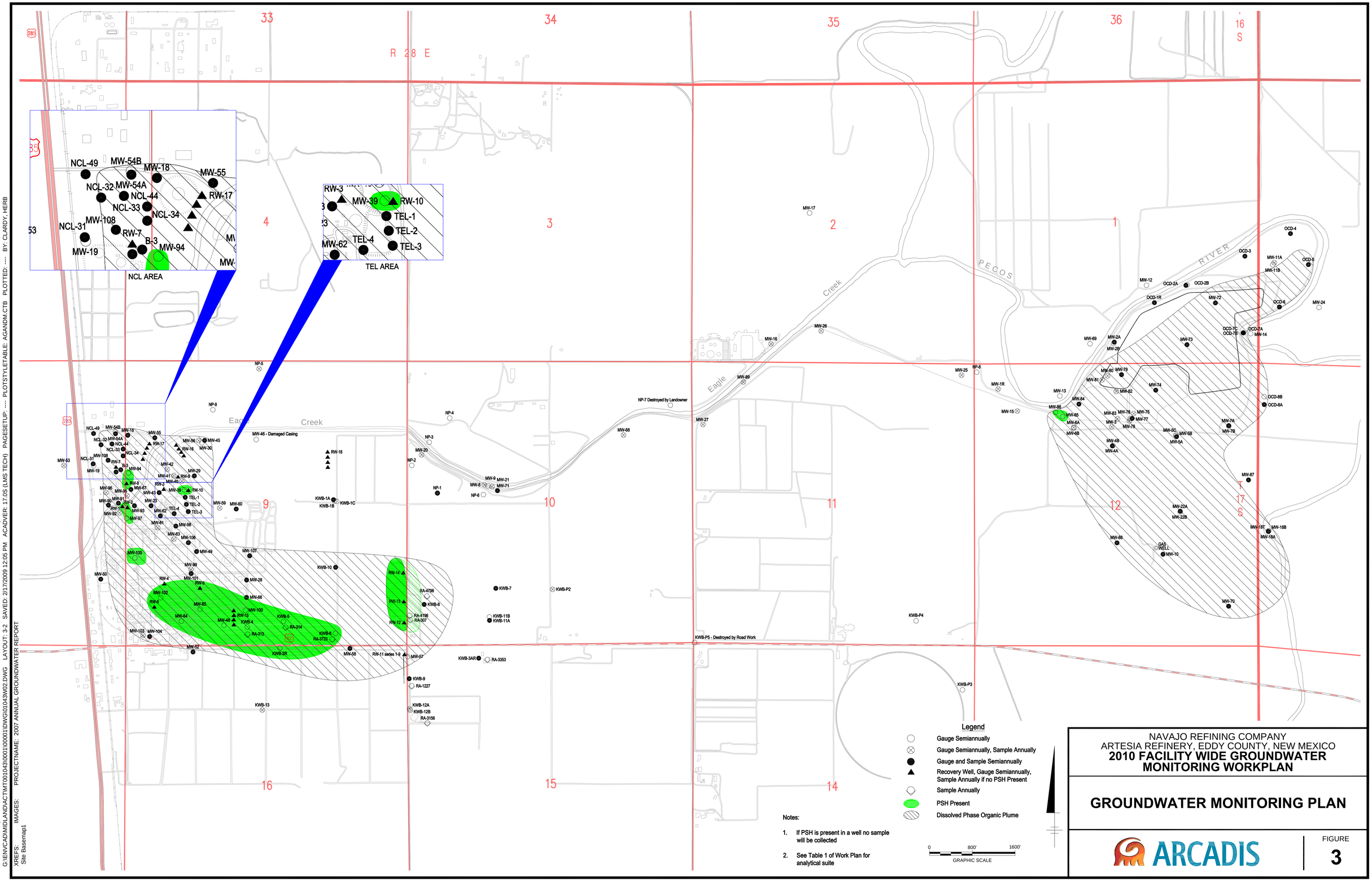
NAVAJO REFINING COMPANY
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO
2010 FACILITY WIDE GROUNDWATER MONITORING WORKPLAN

WELL LOCATIONS

ARCADIS

FIGURE
2

CITY: MIDLAND, TX DIV/GROUP: ENV DB: H.CLARDY LD: PIC: PM: S.HALL TM: S.HALL TR: M.COWAN LYR: ON=*;OFF=*REF* UN: 31-009-00451
G:\ENVCAD\MIDLAND\ACT\MT0010430\00010000\1\DWG\01043W02.DWG LAYOUT: 3-2 SAVED: 2/17/2009 12:05 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: AGANDM.CTB PLOTTED: ---- BY: CLARDY, HERB
XREFS: Site Basemap IMAGES: PROJECTNAME: 2007 ANNUAL GROUNDWATER REPORT



NAVAJO REFINING COMPANY
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO
2010 FACILITY WIDE GROUNDWATER MONITORING WORKPLAN

GROUNDWATER MONITORING PLAN

ARCADIS

FIGURE
3

CITY: MIDLAND, TX DIV/GROUP: ENV DB: H.CLARDY LD: PIC: PM: S.HALL TM: S.HALL TR: M.COWAN LYR: ON=*;OFF="REF" UN: 31-009-00451 PAGESETUP: ---- PLOTSTYLETABLE: AGANDM.CTB PLOTTED: ---- BY: CLARDY, HERB
G:\ENVCAD\MIDLAND\ACTMT001\043\00010\00001\DWG\01043W02.DWG LAYOUT: 3-2 SAVED: 2/17/2009 12:05 PM ACADVER: 17.0S (LMS TECH)
XREFS: Site Basemap1 IMAGES: PROJECTNAME: 2007 ANNUAL GROUNDWATER REPORT

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	**Date**	**DRO**	**GRO**	**1,2,4-Trimethyl benzene**	**1,2-Dichloro ethane**	**1,3,5-Trimethyl benzene**	**2-Butanone**	**4-Isopropyl toluene**	**Acetone**	**Benzene**	**cis-1,2-Dichloro ethene**	**Ethyl benzene**	**Isopropyl benzene**	**m,p-Xylene**	**Methyl tert-butyl ether**	**Naphthalene**	**n-Butyl benzene**	**n-Propyl benzene**	**o-Xylene**	**sec-Butyl benzene**	**Tetra chloro ethene**	**Toluene**	**Tri chloro ethene**	**Total Xylenes**
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
KWB #1A	10/17/2006	**0.062**		<5	<5	<5	<10	<5	<10	<10	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #1A	04/20/2007	**0.094**		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #1A	09/27/2007	**0.053**		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #1A	04/28/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #1A	09/24/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #1A	04/07/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #1A	09/29/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #1C	10/17/2006			<5	<5	<5	<10	<5	<10	<10	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #1C	12/11/2006			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #1C	04/20/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #1C	09/27/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #1C	04/07/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #1C	09/24/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #1C	04/07/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #1C	09/29/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #P2	10/18/2006	<0.050		<5	<5	<5	<10	<5	**32**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #P2	12/15/2006	**0.086**		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #P2	09/30/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #P2	04/09/2009	<0.020																						
KWB #2R	10/10/2006	***0.37***		***57***	<5	***14***	<10	<5	<10	***1100***	<5	**120**	**5.9**	**110**	***180***	**21**	<5	**8.8**	<5	<5	<5	<5	<5	**120**
KWB #2R	12/11/2006	***3.6***		<5	<5	***35***	<10	<5	<10	***810***	<5	**72**	**19**	<10	***360***	***39***	<5	**34**	<5	**6.8**	<5	<5	<5	<15
KWB #3R	10/17/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #3R	12/18/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #3R	04/24/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #3AR	09/17/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #3AR	04/07/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #3AR	09/24/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #3AR	04/09/2009	<0.020		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #3AR	09/29/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50
KWB #5	10/10/2006	***1.4***		***120***	<5	***31***	<10	<5	<10	***11000***	<5	**380**	**70**	**450**	***4600***	***84***	**18**	**120**	<5	**13**	<5	**530**	<5	<15
KWB #5	12/11/2006	***1.3***		***83***	<5	***22***	<10	<5	<10	***9400***	<5	**250**	**62**	**270**	***6200***	***83***	**19**	**98**	**38**	**13**	<5	**420**	<5	**310**
KWB #7	10/18/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**55**	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #7	12/27/2006	**0.11**		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**44**	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #7	04/23/2007	**0.05**		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**59**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #7	10/02/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**85**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #7	04/07/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	***160***	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #7	09/24/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	***140***	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #7	04/07/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**59**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #7	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**42**	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	**Date**	**DRO**	**GRO**	**1,2,4-Trimethyl benzene**	**1,2-Dichloro ethane**	**1,3,5-Trimethyl benzene**	**2-Butanone**	**4-Isopropyl toluene**	**Acetone**	**Benzene**	**cis-1,2-Dichloro ethene**	**Ethyl benzene**	**Isopropyl benzene**	**m,p-Xylene**	**Methyl tert-butyl ether**	**Naphthalene**	**n-Butyl benzene**	**n-Propyl benzene**	**o-Xylene**	**sec-Butyl benzene**	**Tetra chloro ethene**	**Toluene**	**Tri chloro ethene**	**Total Xylenes**
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
KWB #9	09/29/2006	<0.050		<5	<5	<5	<10	<5	<10	***7.7***	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #9	12/15/2006	**0.056**		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #9	04/24/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #9	09/17/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #9	04/07/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #9	09/24/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #9	04/08/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #9	09/29/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #10	10/17/2006	***0.29***		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	***5100***	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #10	12/11/2006	***0.26***		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	***6200***	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #10	04/20/2007	***0.32***		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	***4900***	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #10	09/27/2007	***0.4***		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	***6900***	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #10	04/07/2008	***0.33***		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	***6600***	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #10	09/24/2008	***0.43***		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	***7500***	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #10	04/07/2009	***0.33***		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	***6000***	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #10	09/29/2009																							
KWB #11A	10/18/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**9.4**	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #11A	12/18/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**11**	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #11A	04/23/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**8.6**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #11A	09/26/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**11**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #11A	04/07/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**19**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #11A	09/24/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**11**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #11A	04/07/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**12**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #11A	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #12A	10/17/2006	<0.050		<5	<5	<5	<10	<5	<10	***50***	<5	**11**	<5	**11**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #12A	12/15/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #12A	09/17/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #12A	09/30/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #12A	09/29/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #13	10/19/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #13	12/11/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
KWB #13	04/23/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #13	09/25/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
KWB #13	04/09/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #13	09/24/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #13	04/13/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
KWB #13	09/29/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	**Date**	**DRO**	**GRO**	**1,2,4-Trimethyl benzene**	**1,2-Dichloro ethane**	**1,3,5-Trimethyl benzene**	**2-Butanone**	**4-Isopropyl toluene**	**Acetone**	**Benzene**	**cis-1,2-Dichloro ethene**	**Ethyl benzene**	**Isopropyl benzene**	**m,p-Xylene**	**Methyl tert-butyl ether**	**Naphthalene**	**n-Butyl benzene**	**n-Propyl benzene**	**o-Xylene**	**sec-Butyl benzene**	**Tetra chloro ethene**	**Toluene**	**Tri chloro ethene**	**Total Xylenes**
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #1R	09/25/2007	**0.2**		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #1R	04/01/2008	<0.02		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #1R	09/10/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #1R	04/02/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #1R	09/23/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #2A	09/25/2007	**0.066**	**0.0511**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #2A	04/02/2008	**0.11**	<0.02	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #2A	09/17/2008	**0.18**	<0.02	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #2A	04/01/2009	**0.099**	<0.020	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #2A	09/21/2009	**0.094**		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #3	04/17/2007	***1.3***	**0.518**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #3	10/01/2007	***1.8***	**0.487**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	***5.6***	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #3	04/02/2008	***1.3***	**0.386**	<0.6	<0.5	<0.7	<0.8	<0.7	**15**	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #3	09/17/2008	***1.7***	**0.41**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #3	04/01/2009	***1***	**0.27**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #3	09/21/2009	***1.3***	**0.447**	<5	<5	<5	<10	<5	**15**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #4A	04/18/2007		**0.43**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	**5.6**	<0.7	**41**	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	**46**
MW #4A	04/24/2007	***1.7***																						
MW #4A	04/27/2007	***0.89***	**0.437**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	***9.2***	<0.5	**8.6**	<0.7	**36**	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	**40**
MW #4A	09/24/2007	<0.020	**0.384**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	**12**	<0.7	**37**	<0.5	<1.1	<0.8	<0.7	**8**	<0.7	<0.5	<0.5	<0.7	**45**
MW #4A	04/02/2008	***0.79***	**0.315**	<0.6	<0.5	<0.7	<0.8	<0.7	**11**	<0.6	<0.5	<0.5	**5.7**	**25**	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	**0.028**
MW #4A	09/22/2008	***0.73***	**0.446**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	**7.5**	**18**	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	**20**
MW #4A	04/06/2009	***0.79***	**0.328**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #4A	09/23/2009	***0.97***	**0.339**	<5	<5	<5	<10	<5	**13**	<5	<5	<5	<5	**13**	<5	<5	<5	<5	<5	<5	<5	<5	<5	**16**
MW #5A	04/18/2007	***1.4***	**6.18**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**5.3**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #5A	09/24/2007	***3.5***	**5.8**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**5.8**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #5A	04/01/2008	***5.3***	**7.12**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**6.8**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #5A	09/15/2008	***4.2***	**5.95**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**6.2**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #5A	09/22/2009	***4.6***	**5.7**	<5	<5	<5	<10	<5	**22**	<5	<5	<5	<5	<10	**6.2**	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #6A	09/24/2007	***1.3***	**0.619**	<0.6	<0.5	<0.7	<0.8	<0.7	**12**	<0.6	<0.5	**6**	<0.7	<1	<0.5	<1.1	<0.8	<0.7	**17**	<0.7	<0.5	**5**	<0.7	**22**
MW #6A	04/02/2008	***3.1***	**0.443**	<0.6	<0.5	<0.7	<0.8	<0.7	**14**	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	**10**	<0.7	<0.5	<0.5	<0.7	<1.5
MW #6A	09/15/2008	***1.4***	**0.379**	<0.5	<0.5	<0.5	<1	<0.5	**12**	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #6A	04/01/2009	***1.5***	**0.41**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	**5**	<0.5	<0.6	<0.5	<0.5	<1
MW #6A	09/21/2009	***1.5***	**0.264**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	**5.2**	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	**Date**	**DRO**	**GRO**	**1,2,4-Trimethyl benzene**	**1,2-Dichloro ethane**	**1,3,5-Trimethyl benzene**	**2-Butanone**	**4-Isopropyl toluene**	**Acetone**	**Benzene**	**cis-1,2-Dichloro ethene**	**Ethyl benzene**	**Isopropyl benzene**	**m,p-Xylene**	**Methyl tert-butyl ether**	**Naphthalene**	**n-Butyl benzene**	**n-Propyl benzene**	**o-Xylene**	**sec-Butyl benzene**	**Tetra chloro ethene**	**Toluene**	**Tri chloro ethene**	**Total Xylenes**
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #7A	04/18/2007		**0.747**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #7A	04/23/2007	***0.91***																						
MW #7A	04/27/2007	***1***	**0.751**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	***10***	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	**5.3**	<0.7	<0.5	<0.5	<0.7	<1.5
MW #7A	09/24/2007	**0.057**	**0.69**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #7A	04/01/2008	***0.78***	**0.747**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #7A	09/17/2008	***1***	**0.736**	<0.5	<0.5	<0.5	<1	<0.5	**18**	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #7A	04/02/2009	***0.51***	**0.602**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #7A	09/22/2009	***0.84***	**0.51**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #8	10/10/2006	**0.084**		<5	<5	<5	<10	<5	<10	***18***	<5	**5.2**	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #8	12/18/2006	***0.22***		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #8	04/20/2007	**0.061**		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #8	09/26/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #8	04/03/2008	<0.02		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #8	09/23/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #8	04/03/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #8	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**5.6**	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #9	04/03/2008	<0.02		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**5.4**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #9	09/23/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**7.5**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #9	04/03/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**10**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #9	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**7.3**	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #10	10/18/2006	***0.91***	**0.988**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #10	12/14/2006	***0.72***	**1.28**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #10	04/19/2007	***0.89***	**1.61**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #10	09/24/2007	***0.56***	**1.63**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #10	04/02/2008	***0.73***	**1.72**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #10	09/22/2008	***1***	**1.62**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #10	04/06/2009	***0.97***	**1.51**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #10	09/23/2009	***1.1***	**1.23**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #11A	10/05/2006	<0.050	<0.050	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #11A	12/13/2006	<0.050	<0.050	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #11A	09/25/2007	<0.020	<0.020	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #11A	04/01/2008	<0.02	<0.02	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #11A	09/15/2008	<0.02	<0.02	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #11A	04/02/2009	<0.020	<0.020	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #11A	09/22/2009	<0.050	<0.0500	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #15	10/04/2006	<0.050	**0.0859**	<5	<5	<5	<10	<5	<10	***14***	<5	**8.6**	<5	**10**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #15	12/12/2006	**0.18**	**0.231**	<5	<5	<5	<10	<5	<10	<5	<5	**5.1**	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #15	09/25/2007	<0.020	<0.020	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #15	04/01/2008	***0.5***	**0.64**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	***18***	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #15	09/22/2008	***0.69***	**0.559**	<0.5	<0.5	<0.5	<1	<0.5	<1	**5**	<0.5	**33**	**7.5**	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #15	04/06/2009	***0.67***	**0.515**	<0.5	<0.5	<0.5	<1	<0.5	<1	***9.1***	<0.5	**14**	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #15	09/23/2009	**0.16**	**0.108**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #16	10/18/2006	**0.11**		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #16	12/12/2006	**0.11**		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #16	09/19/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #16	04/01/2008	**0.058**		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #16	09/10/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #16	04/02/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #16	09/17/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #17	04/03/2008																							
MW #17	09/23/2008																							
MW #17	04/09/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #17	09/28/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #18	10/03/2006	***0.39***	**0.104**	<5	<5	<5	<10	<5	<10	***9***	<5	**8.9**	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #18	12/20/2006	***0.45***	<0.05	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #18	04/18/2007	**0.2**		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #18	04/26/2007	***0.44***	<0.020	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #18	09/28/2007	***0.34***	**0.0617**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #18	04/08/2008	<0.02	<0.02	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #18	09/26/2008	***0.36***	<0.02	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #18	04/13/2009	***0.28***	<0.020	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #18	09/24/2009	***0.38***	<0.0500	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #18A	10/11/2006	***0.21***		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #18A	12/14/2006	**0.19**	<0.05	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #18A	09/24/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #18A	04/01/2008	***0.23***		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #18A	09/17/2008	***0.3***		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #18A	04/02/2009	***0.24***		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #18A	09/22/2009	***0.24***		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #20	09/29/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #20	12/18/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #20	04/19/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #20	09/26/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #20	04/07/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #20	09/23/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #20	04/03/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #20	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #21	10/10/2006	<0.050		<5	<5	<5	<10	<5	<10	8.9	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #21	12/18/2006	0.11		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	5.1	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #21	04/20/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #21	09/26/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #21	04/03/2008	<0.02		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	5.7	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #21	09/23/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	8.8	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #21	04/03/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	12	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #21	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	8.3	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #22A	10/11/2006	2.2	5.45	<5	<5	<5	10	<5	32	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #22A	12/14/2006	1.5	6.96	<5	<5	<5	<10	<5	29	<5	<5	<5	<5	<10	6	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #22A	04/19/2007	2.1	8.43	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #22A	09/24/2007	1.8	8.46	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	5.1	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #22A	04/07/2008	3.1		<0.5	<0.5	<0.5	<1	<0.5	37	<0.5	<0.5	<0.5	<0.5	<1	8.3	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #22A	09/22/2008	3.1	9.19	<0.5	<0.5	<0.5	<1	<0.5	23	<0.5	<0.5	<0.5	<0.5	<1	7.3	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #22A	04/06/2009	2.8	6.87	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	5.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #22A	09/23/2009	3	6.01	<5	<5	<5	<10	<5	22	<5	<5	<5	<5	<10	7.9	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #23	10/02/2006	5.5		590	<5	120	<10	<5	14	15000	<5	2100	130	2100	29	250	31	200	<5	18	<5	1400	<5	2300
MW #23	12/21/2006	20		650	<5	160	<10	14	<10	16000	<5	2900	160	2700	32	360	45	260	<250	26	<5	2100	<5	2900
MW #23	04/26/2007	6.6		710	<0.5	150	<0.8	14	<2.5	14000	<0.5	2600	160	2300	<0.5	1000	45	250	<25	28	<0.5	1100	<0.7	2400
MW #23	09/27/2007	5.4		620	<25	<35	<40	<35	<120	15000	<25	2300	<35	1900	<25	630	<40	250	<25	<35	<25	1200	<35	2100
MW #23	04/08/2008	10		660	<0.5	130	<1	<0.5	<1	14000	<0.5	2600	200	2000	32	330	47	280	<0.5	31	<0.6	1100	<0.5	2200
MW #23	09/29/2008	11		450	<0.5	85	<1	13	<1	13000	<0.5	1800	210	1600	33	300	39	240	230	30	<0.6	680	<0.5	1800
MW #23	04/14/2009	17		580	<0.5	90	<1	15	<1	15000	<0.5	1900	190	1600	27	370	50	330	<12	36	<0.6	600	<0.5	1700
MW #23	09/28/2009	3.7		110	<5	89	<10	<5	<10	7700	<5	140	60	310	7	99	9.5	79	<5	8.1	<5	5.2	<5	310
MW #25	10/12/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #25	12/13/2006			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #25	04/18/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #25	09/25/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #25	04/01/2008	<0.02		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #25	09/22/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #25	04/06/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #25	09/23/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #26	10/12/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #26	12/12/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #26	09/19/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #26	04/01/2008	<0.02		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #26	09/10/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #26	04/02/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #26	09/17/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #27	10/12/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #27	12/15/2006	0.085		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #27	04/19/2007	0.052		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #27	09/24/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #27	04/01/2008																							
MW #27	09/23/2008																							
MW #27	04/03/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #27	09/17/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #28	10/03/2006	4.4		170	<5	11	<10	<5	<10	490	<5	130	61	180	9600	36	9.2	76	6.8	9.2	<5	14	<5	180
MW #28	12/27/2006	6.4		270	<5	13	<10	9.3	<10	710	<5	140	68	200	5500	62	15	86	7.8	14	<5	22	<5	210
MW #28	04/26/2007	2.6		200	<0.5	91	<0.8	<0.7	<2.5	660	<0.5	82	62	180	4600	46	8.5	77	170	9.7	<0.5	16	<0.7	350
MW #28	04/09/2008	3.5		150	<0.5	69	<1	<0.5	<1	310	<0.5	21	68	120	8500	19	10	83	<0.5	14	<0.6	8	<0.5	130
MW #28	04/14/2009	3		190	<0.5	<0.5	<1	6.7	<1	340	<0.5	22	63	130	7400	11	9.8	80	<0.5	12	<0.6	8.8	<0.5	140
MW #28	09/25/2009	1.6		14	<5	25	<10	<5	<10	180	<5	10	40	47	7700	<5	<5	44	<5	5.3	<5	5.7	<5	49
MW #29	10/03/2006	1.4		<5	<5	<5	<10	<5	<10	11	<5	9.8	6.9	11	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #29	12/27/2006	0.59		<5	<5	<5	<10	<5	<10	<5	<5	<5	6	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #29	04/26/2007	0.52		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #29	09/28/2007	0.78		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	7.6	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #29	04/09/2008	0.3		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #29	09/26/2008	0.85		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	8.3	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #29	04/13/2009	0.53		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #29	09/24/2009	0.48		<5	<5	<5	<10	<5	<10	<5	<5	<5	10	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #39	04/08/2008	4.4		130	<0.5	7.9	<1	<0.5	<1	410	<0.5	12	75	140	<0.5	<0.5	18	100	58	19	<0.6	11	<0.5	200
MW #41	12/27/2006	1.9		<5	<5	<5	<10	<5	<10	64	<5	<5	17	<10	15	<5	<5	6.5	<5	7.7	<5	<5	<5	<15
MW #41	04/27/2007	1.3		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	73	<0.5	<0.5	16	<1	9.9	<1.1	<0.8	<0.7	<0.5	5.1	<0.5	<0.5	<0.7	<1.5
MW #41	10/01/2007	1.6		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	37	<0.5	<0.5	9.4	<1	59	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #41	04/08/2008	1		<0.5	<0.5	<0.5	<1	<0.5	<1	85	<0.5	<0.5	30	17	8	<0.5	<0.6	9.8	<0.5	7.2	<0.6	<0.5	<0.5	17
MW #41	09/29/2008	0.75		<0.5	<0.5	<0.5	<1	<0.5	<1	76	<0.5	<0.5	20	<1	24	<0.5	<0.6	<0.5	<0.5	5.7	<0.6	<0.5	<0.5	<1
MW #41	04/13/2009	1		<0.5	<0.5	<0.5	<1	<0.5	<1	23	<0.5	<0.5	9.5	<1	60	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #41	09/24/2009	1.1		<5	<5	<5	<10	<5	<10	35	<5	<5	5.5	<10	24	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #42	12/21/2006	5.9		210	<5	11	<10	6.2	<10	2300	<5	86	84	400	18	47	11	98	<120	<5	<5	23	<5	400
MW #42	04/27/2007	4.6		240	<0.5	120	<0.8	<0.7	<2.5	2400	<0.5	42	83	400	19	38	7.3	90	<12	16	<0.5	6.6	<0.7	400
MW #42	10/01/2007	2.2		190	<0.5	7.5	<0.8	<0.7	<2.5	1900	<0.5	32	77	380	22	33	<0.8	84	<0.5	15	<0.5	6.1	<0.7	380
MW #42	04/08/2008	4.7		52	<0.5	22	<1	<0.5	<1	2300	<0.5	<0.5	31	99	27	5.3	<0.6	20	<0.5	12	<0.6	<0.5	<0.5	99
MW #42	09/29/2008	3.4		270	<0.5	120	<1	<0.5	10	2000	<0.5	26	83	470	24	45	8.9	130	<0.5	16	<0.6	6.1	<0.5	470
MW #42	04/13/2009	2.6		250	<0.5	9.3	<1	<0.5	<1	1600	<0.5	27	92	420	28	40	9.2	110	<12	17	<0.6	5.7	<0.5	420
MW #42	09/24/2009	1.3		56	<5	26	<10	<5	<10	560	<5	<5	33	98	31	<5	<5	26	<5	5.9	<5	<5	<5	98

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #43	10/02/2006	3		99	<5	9.3	<10	<5	<10	3700	<5	210	71	330	<5	34	8.9	80	28	<5	<5	62	<5	360
MW #43	12/21/2006	17		91	<5	11	<10	<5	<10	3900	<5	210	75	310	6	43	12	84	26	15	<5	64	<5	340
MW #43	04/26/2007	6		90	<0.5	8	<0.8	<0.7	<2.5	3600	<0.5	200	83	320	<0.5	27	9.8	91	29	14	<0.5	62	<0.7	350
MW #43	09/27/2007	2.5		140	<0.5	12	<0.8	<0.7	<2.5	4500	<0.5	310	82	390	<0.5	54	13	99	31	14	<0.5	62	<0.7	420
MW #43	04/08/2008	3.2		95	<0.5	9.4	<1	<0.5	<1	1800	<0.5	180	90	320	<0.5	39	11	100	31	15	<0.6	61	<0.5	360
MW #43	09/29/2008	5		200	<0.5	14	<1	<0.5	<1	4400	<0.5	370	94	500	<0.5	73	13	140	<0.5	17	<0.6	87	<0.5	540
MW #43	04/14/2009	5.7		200	<0.5	23	<1	<0.5	<1	4900	<0.5	510	100	690	<0.5	84	15	130	<12	17	<0.6	140	<0.5	720
MW #43	09/28/2009	2		81	<5	52	<10	<5	<10	810	<5	24	55	200	8.7	<5	5.6	60	25	7.9	<5	50	<5	220
MW #45	09/29/2006	0.36		5	<5	<5	<10	<5	<10	16	<5	5.3	<5	11	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #45	04/27/2007	0.3		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #45	10/01/2007	0.73		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #45	04/09/2008	0.26		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #45	09/25/2008	0.42		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #45	04/06/2009	0.37		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #45	09/24/2009	0.33		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #49	12/20/2006	3.2	5.55	120	<5	21	<10	5.2	<10	1200	<5	41	46	160	97	38	11	44	<5	8.9	<5	28	<5	160
MW #49	04/27/2007	1.5	6.09	97	<0.5	16	<0.8	<0.7	<2.5	1100	<0.5	47	45	150	93	27	6.7	39	150	6.2	<0.5	25	<0.7	300
MW #49	09/28/2007	2	7.49	110	<5	<7	<8.0	<7	<25	1100	<5	<5	<7	160	110	70	<8.0	<7	<5	<7	<5	<5	<7	160
MW #49	04/08/2008	1.8	6.57	120	<0.5	19	<1	<0.5	<1	1000	<0.5	39	51	170	120	27	8.5	46	<0.5	7.3	<0.6	29	<0.5	170
MW #49	09/29/2008	2.2	5.79	140	<0.5	17	<1	<0.5	<1	890	<0.5	38	41	140	130	27	9.2	52	5.1	7.5	<0.6	23	<0.5	150
MW #49	04/14/2009	1.9	4.27																					
MW #50	10/16/2006	0.21		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	5.9	<5	<5	<5	<15
MW #50	12/28/2006	0.39		<5	<5	<5	<10	<5	<10	<5	<5	<5	5.7	<10	<5	<5	<5	<5	<5	11	<5	<5	<5	<15
MW #50	04/25/2007	0.3		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	10	<0.5	<0.5	<0.7	<1.5
MW #50	09/28/2007	0.28		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	6.6	<0.8	<0.7	<0.5	8.1	<0.5	<0.5	<0.7	<1.5
MW #50	04/09/2008	0.42		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	6.7	<0.6	<0.5	<0.5	<1
MW #50	09/29/2008	0.38		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	5.7	<1	<0.5	<0.5	<0.6	<0.5	<0.5	9.3	<0.6	<0.5	<0.5	<1
MW #50	04/09/2009	0.36		<0.5	<0.5	<0.5	33	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	6	<0.6	<0.5	<0.5	<1
MW #50	09/28/2009	0.12		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #52	10/10/2006	0.16		<5	<5	<5	<10	<5	<10	21	<5	8.8	<5	11	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #52	12/11/2006	0.16		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #52	04/23/2007	0.11		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #52	09/17/2007	0.12		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #52	04/07/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #52	09/12/2008	0.22		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #52	04/08/2009	0.084		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #52	09/30/2009	0.08		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #53	04/23/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #53	09/25/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #53	04/07/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #53	09/12/2008	0.074		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #53	04/08/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #53	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #54A	04/23/2007	0.49		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #54A	09/25/2007	0.6		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #54A	04/07/2008	0.48		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #54A	09/12/2008	0.58		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #54A	04/08/2009	0.42		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #54A	10/05/2009	0.3		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #55	04/27/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	6.4	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #55	10/01/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #55	04/09/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #55	09/26/2008	0.051		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #55	04/10/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #55	09/24/2009	0.059		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #56	09/29/2006	0.41		<5	<5	<5	<10	<5	<10	9.9	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #56	12/27/2006	0.26		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #56	04/30/2007	0.23		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #56	10/01/2007	0.48		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #56	04/09/2008	0.52		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #56	09/16/2008	0.3		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #56	04/10/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #56	09/24/2009	0.073		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #58	10/17/2006	0.33		43	<5	10	<10	<5	<10	820	<5	93	5.8	93	180	23	<5	7.5	<5	<5	<5	<5	<5	95
MW #58	12/11/2006	0.23		27	<5	6.8	<10	<5	<10	540	<5	60	<5	44	220	14	<5	5.5	<5	<5	<5	<5	<5	45
MW #58	04/24/2007	4.2		58	<0.5	57	<0.8	<0.7	<2.5	1200	<0.5	230	18	130	160	54	<0.8	46	9.3	9.7	<0.5	9.4	<0.7	140
MW #58	09/17/2007	0.46		15	<0.5	<0.7	<0.8	<0.7	<2.5	400	<0.5	44	<0.7	22	210	6.4	<0.8	<0.7	9	<0.7	<0.5	<0.5	<0.7	31
MW #58	04/07/2008	0.47		30	<0.5	<0.5	<1	<0.5	<1	640	<0.5	70	<0.5	48	180	13	<0.6	6	5.2	<0.5	<0.6	<0.5	<0.5	53
MW #58	09/12/2008	0.75		160	<0.5	<0.5	<1	<0.5	<1	510	<0.5	42	<0.5	22	250	<0.5	<0.6	<0.5	7.1	<0.5	<0.6	<0.5	<0.5	29
MW #58	04/08/2009	0.68		31	<0.5	<0.5	<1	<0.5	<1	730	<0.5	37	<0.5	41	220	16	<0.6	6.2	<0.5	<0.5	<0.6	<0.5	<0.5	45
MW #58	09/30/2009	0.73		39	<5	6.8	<10	<5	<10	1800	<5	120	17	62	190	17	<5	25	23	<5	<5	<5	<5	85
MW #61	12/08/2006	1.5	19.3	310	<5	76	30	8.5	46	5200	<5	190	110	1100	<5	200	18	130	<5	14	<5	280	<5	1100
MW #61	04/24/2007	2.4	19.3	94	<0.5	74	20	<0.7	25	4600	<0.5	150	110	1000	<0.5	230	<0.8	140	<12	13	<0.5	240	<0.7	1000
MW #61	09/27/2007	2.1	18.9	360	<0.5	80	17	9.5	25	3900	<0.5	120	130	920	<0.5	310	19	140	<12	14	<0.5	210	<0.7	920
MW #61	04/08/2008	3.8	19.2	370	<0.5	80	15	<0.5	19	4000	<0.5	92	130	980	<0.5	250	16	170	<0.5	15	<0.6	230	<0.5	980
MW #61	09/16/2008	3.5	14.6	340	<0.5	79	13	<0.5	22	3500	<0.5	80	140	760	<0.5	220	17	160	<0.5	15	<0.6	190	<0.5	760
MW #61	04/09/2009	3.2	16.2	320	<0.5	78	<1	<0.5	12	3600	<0.5	79	140	820	<0.5	170	17	160	<12	14	<0.6	210	<0.5	820
MW #61	10/01/2009	1.4	9.8	180	<5	43	14	<5	24	2400	<5	46	73	460	<5	130	7.6	80	<120	6.2	<5	150	<5	460

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #62	12/21/2006	11	8.82	220	<5	11	<10	9.3	<10	2800	<5	150	130	330	11	60	18	180	<5	26	<5	<5	<5	330
MW #62	09/27/2007	4	12.5	200	<0.5	12	13	7	27	3800	<0.5	77	140	370	18	75	<0.8	190	<0.5	25	<0.5	<0.5	<0.7	370
MW #62	04/08/2008	8.3	12.6	180	<0.5	11	12	6.5	<1	3900	<0.5	60	150	380	<0.5	79	14	250	<0.5	25	<0.6	<0.5	<0.5	380
MW #62	09/16/2008	5.5	11.5	190	<0.5	14	<1	<0.5	11	3900	<0.5	56	160	400	13	82	19	310	<0.5	32	<0.6	<0.5	<0.5	400
MW #62	04/14/2009	7	10.2	140	<0.5	11	<1	6.3	<1	3500	<0.5	44	160	320	17	65	17	220	<0.5	29	<0.6	<0.5	<0.5	320
MW #62	10/01/2009	1.2	6.61	80	<5	8.4	<10	<5	<10	2900	<5	32	64	240	19	32	<5	100	<5	7.8	<5	<5	<5	240
MW #63	12/08/2006	8.1	9.89	200	<5	45	<10	11	20	2200	<5	450	60	240	600	100	29	84	8	17	<5	16	<5	250
MW #63	04/24/2007	20	12	33	<0.5	55	<0.8	<0.7	17	1700	<0.5	450	58	260	540	97	29	92	8.2	18	<0.5	16	<0.7	270
MW #63	04/26/2007	10	11.6	260	<0.5	12	<0.8	<0.7	<2.5	3200	<0.5	150	130	350	<0.5	57	15	180	<0.5	23	<0.5	8.9	<0.7	350
MW #63	09/28/2007	5.8	10.7	130	<0.5	32	<0.8	6.6	<2.5	2300	<0.5	350	50	170	690	78	25	70	7	14	<0.5	18	<0.7	180
MW #63	04/08/2008	8.9	10.2	110	<0.5	29	<1	5.1	<1	1700	<0.5	350	53	170	720	76	18	72	6.4	14	<0.6	13	<0.5	180
MW #63	09/16/2008	15	8.64	140	<0.5	35	<1	<0.5	<1	1600	<0.5	320	59	190	890	97	23	92	6	17	<0.6	13	<0.5	190
MW #66	12/27/2006	3.1	12.8	190	<5	31	<10	6.4	<10	4000	<5	330	81	310	8400	93	23	110	16	18	<5	21	<5	330
MW #66	04/26/2007	1.4	16.9	82	<0.5	12	<0.8	<0.7	<2.5	2500	<0.5	190	66	100	7000	37	16	80	6	15	<0.5	8.2	<0.7	110
MW #66	10/01/2007	2.1	19.8	80	<0.5	34	<0.8	<0.7	<2.5	4600	<0.5	200	51	130	7300	54	12	67	16	9.2	<0.5	19	<0.7	150
MW #66	04/09/2008	1.4	16.6	390	<0.5	<0.5	<1	<0.5	<1	3300	<0.5	110	69	46	7400	71	15	92	<0.5	14	<0.6	<0.5	<0.5	50
MW #66	09/25/2008	1.4	20.7	46	<0.5	<0.5	<1	<0.5	<1	5200	<0.5	140	88	64	5500	110	21	120	6.1	18	<0.6	8.8	<0.5	70
MW #66	04/14/2009	1.7	12	19	<0.5	<0.5	<1	<0.5	<1	2100	<0.5	60	69	20	5400	78	14	100	<0.5	14	<0.6	<0.5	<0.5	21
MW #66	09/25/2009	0.59	12.5	7.2	<5	<5	<10	<5	<10	3300	<5	37	38	16	5500	47	<5	44	<5	5.4	<5	<5	<5	18
MW #67	12/28/2006	3.6	0.765	<5	<5	<5	<10	<5	<10	94	<5	<5	44	<10	270	9.8	8	30	<5	12	<5	<5	<5	<15
MW #67	04/25/2007	1.6	1.04	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	120	<0.5	<0.5	44	<1	81	5.4	<0.8	24	<0.5	10	<0.5	<0.5	<0.7	<1.5
MW #67	09/28/2007	1.6	1.07	<6.0	<5	<7	<8.0	<7	<25	140	<5	<5	<7	<10	67	<11	<8.0	<7	<5	<7	<5	<5	<7	<15
MW #67	04/09/2008	1.1	0.743	<0.5	<0.5	<0.5	<1	<0.5	<1	64	<0.5	<0.5	34	<1	27	<0.5	<0.6	14	<0.5	9.5	<0.6	<0.5	14	<1
MW #67	09/16/2008	2.3	2.33	<0.5	<0.5	<0.5	<1	<0.5	<1	110	<0.5	<0.5	38	<1	1300	<0.5	<0.6	18	<0.5	11	<0.6	<0.5	9	<1
MW #67	04/14/2009	2.7		<0.5	<0.5	<0.5	<1	<0.5	<1	78	<0.5	<0.5	32	<1	150	<0.5	<0.6	11	<0.5	9.2	<0.6	<0.5	17	<1
MW #67	10/01/2009	0.67	0.368	<5	<5	<5	<10	<5	<10	45	<5	<5	8.1	<10	110	<5	<5	<5	<5	<5	<5	<5	5	<15
MW #68	10/12/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #68	12/15/2006	0.065		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #68	04/23/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #68	09/26/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #68	04/03/2008	<0.02		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #68	09/23/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #68	04/03/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #68	09/29/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	**Date**	**DRO**	**GRO**	**1,2,4-Trimethyl benzene**	**1,2-Dichloro ethane**	**1,3,5-Trimethyl benzene**	**2-Butanone**	**4-Isopropyl toluene**	**Acetone**	**Benzene**	**cis-1,2-Dichloro ethene**	**Ethyl benzene**	**Isopropyl benzene**	**m,p-Xylene**	**Methyl tert-butyl ether**	**Naphthalene**	**n-Butyl benzene**	**n-Propyl benzene**	**o-Xylene**	**sec-Butyl benzene**	**Tetra chloro ethene**	**Toluene**	**Tri chloro ethene**	**Total Xylenes**
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #70	10/18/2006	***0.21***	**0.565**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #70	12/14/2006	**0.17**	**0.653**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #70	04/18/2007	**0.2**	**0.911**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #70	09/24/2007	**0.063**	**1**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #70	04/01/2008	***0.29***	**1.47**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #70	09/17/2008	***0.31***	**1.36**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #70	04/02/2009	***0.8***	**1.42**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #70	09/22/2009	***0.28***	**1.21**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #72	04/17/2007	***0.47***	**0.56**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #72	09/24/2007	***0.51***	**0.471**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #72	04/02/2008	***0.59***	**0.433**	<0.6	<0.5	<0.7	<0.8	<0.7	**22**	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #72	09/11/2008		**0.442**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #72	03/30/2009	***0.56***	**110**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #72	09/18/2009	***0.49***	**0.299**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #73	04/17/2007	***0.78***	**0.961**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**6.5**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #73	09/18/2007	***1.4***	**0.92**	<0.6	<0.5	<0.7	<0.8	<0.7	**10**	<0.6	<0.5	<0.5	<0.7	<1	**8**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #73	04/03/2008	***1.1***	**0.992**	<0.6	<0.5	<0.7	<0.8	<0.7	**15**	<0.6	<0.5	<0.5	<0.7	<1	**7.5**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #73	09/10/2008		**1.11**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**5.3**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #73	03/30/2009	***0.98***	**12**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**5.5**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #73	09/18/2009	***1.3***	**0.226**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #74	04/16/2007	***9.9***	**2.31**	<0.6	<0.5	<0.7	<0.8	<0.7	**16**	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #74	09/18/2007	***6.8***	**1.85**	<0.6	<0.5	<0.7	<0.8	<0.7	**24**	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #74	04/03/2008	***8.9***	**2.01**	<0.6	<0.5	<0.7	<0.8	<0.7	**23**	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #74	09/11/2008		**2.2**	**5.2**	<0.5	<0.5	<1	<0.5	**17**	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #74	03/30/2009	***6***	**6.87**	<0.5	<0.5	<0.5	<1	<0.5	**15**	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #74	09/18/2009	***8.4***	**1.57**	<5	<5	<5	<10	<5	**12**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #75	04/16/2007	***6.7***	**3.84**	**9.9**	<0.5	**5.1**	<0.8	<0.7	**22**	<0.6	<0.5	<0.5	<0.7	<1	**9**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #75	09/18/2007	***4.2***	**4.09**	<0.6	<0.5	<0.7	<0.8	<0.7	**20**	<0.6	<0.5	<0.5	<0.7	<1	**11**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #75	04/03/2008	***9***	**4.85**	<0.6	<0.5	<0.7	<0.8	<0.7	**29**	<0.6	<0.5	<0.5	<0.7	<1	**11**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #75	09/11/2008		**5.04**	<0.5	<0.5	<0.5	<1	<0.5	**34**	<0.5	<0.5	<0.5	<0.5	<1	**6.7**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #75	03/30/2009	***5.8***	**5.59**	<0.5	<0.5	<0.5	<1	<0.5	**18**	<0.5	<0.5	<0.5	<0.5	<1	**5.8**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #75	09/18/2009	***6.2***	**3.84**	<5	<5	<5	<10	<5	**15**	<5	<5	<5	<5	<10	**9.3**	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #76	04/17/2007	***7.7***	**3.7**	**13**	<0.5	**5.4**	<0.8	<0.7	**20**	***8.7***	<0.5	**5.3**	<0.7	<1	**10**	<1.1	<0.8	**6.4**	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #76	09/18/2007	***7.8***	**3.24**	**9.4**	<0.5	<0.7	<0.8	<0.7	**17**	***11***	<0.5	<0.5	<0.7	<1	**14**	<1.1	<0.8	**6.6**	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #76	04/03/2008	***8.1***	**2.4**	<0.6	<0.5	<0.7	<0.8	<0.7	**29**	<0.6	<0.5	<0.5	<0.7	<1	**5.4**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #76	09/11/2008		**2.78**	<0.5	<0.5	<0.5	<1	<0.5	**14**	<0.5	<0.5	<0.5	**8.9**	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #76	03/31/2009	***4.2***	**1.44**	<0.5	<0.5	<0.5	<1	<0.5	**13**	<0.5	<0.5	<0.5	<0.5	<1	**5.9**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #76	09/17/2009	***6.5***	**1.99**	<5	<5	<5	<10	<5	**20**	<5	<5	<5	<5	<10	**11**	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #77	04/17/2007	1.8	1.88	<0.6	<0.5	<0.7	<0.8	<0.7	11	42	<0.5	<0.5	<0.7	<1	8	<1.1	<0.8	5.8	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #77	09/18/2007	4	1.75	<0.6	<0.5	<0.7	<0.8	<0.7	18	51	<0.5	5.2	18	<1	11	<1.1	<0.8	14	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #77	04/03/2008	4.7	1.98	<0.6	<0.5	<0.7	<0.8	<0.7	26	<0.6	<0.5	<0.5	<0.7	<1	7.9	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #77	09/11/2008		1.68	<0.5	<0.5	<0.5	<1	<0.5	20	54	<0.5	5.7	18	<1	13	<0.5	<0.6	15	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #77	03/31/2009	5.4	2.14	<0.5	<0.5	<0.5	<1	<0.5	14	12	<0.5	<0.5	<0.5	<1	12	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #77	09/17/2009	4.8	1.53	<5	<5	<5	<10	<5	27	32	<5	<5	<5	<10	10	<5	<5	11	<5	<5	<5	<5	<5	<15
MW #78	04/17/2007	7.4	2.97	7.1	<0.5	<0.7	<0.8	<0.7	<2.5	11	<0.5	<0.5	<0.7	<1	6.2	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #78	09/18/2007	3.3	1.75	<0.6	<0.5	<0.7	<0.8	<0.7	16	5.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #78	04/03/2008	4.4	1.59	<0.6	<0.5	<0.7	<0.8	<0.7	22	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #78	09/11/2008		1.16	<0.5	<0.5	<0.5	<1	<0.5	22	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #78	03/31/2009	7.2	0.726	<0.5	<0.5	<0.5	<1	<0.5	25	6.7	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #78	09/17/2009	5.7	0.628	5	<5	<5	<10	<5	42	13	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #79	04/17/2007	0.58	0.776	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #79	04/03/2008	0.58	0.292	<0.6	<0.5	<0.7	<0.8	<0.7	22	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #79	09/10/2008		0.312	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #79	03/31/2009	0.54	0.235	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #79	09/18/2009	0.51	0.183	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #80	04/17/2007	0.62	0.655	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #80	04/03/2008	0.12	0.0663	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #80	09/10/2008		0.112	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #80	03/31/2009	0.11	0.0528	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #80	09/18/2009	0.15	0.087	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #81	04/17/2007	0.44	0.228	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #81	09/18/2007	0.47	0.226	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #81	04/03/2008	0.46	0.253	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #81	09/10/2008		0.159	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #81	03/31/2009	0.59	0.138	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #81	09/18/2009	0.34	0.135	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #82	04/16/2007	2	1.84	<0.6	<0.5	<0.7	<0.8	<0.7	17	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #82	09/18/2007	3	1.76	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #82	04/02/2008	2.8	1.85	<0.6	<0.5	<0.7	<0.8	<0.7	24	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #82	09/10/2008		1.78	<0.5	<0.5	<0.5	<1	<0.5	27	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #82	03/31/2009	2.6	1.66	<0.5	<0.5	<0.5	<1	<0.5	11	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #82	09/21/2009	3	1.61	<5	<5	<5	<10	<5	20	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #83	04/16/2007	4.6	3.97	9	<0.5	<0.7	<0.8	<0.7	15	<0.6	<0.5	5.7	<0.7	31	<0.5	<1.1	<0.8	7.8	11	<0.7	<0.5	<0.5	<0.7	42
MW #83	09/18/2007	<0.20	3.73	9.1	<0.5	<0.7	<0.8	<0.7	12	5.9	<0.5	6.5	<0.7	35	<0.5	<1.1	<0.8	9.5	12	<0.7	<0.5	<0.5	<0.7	47
MW #83	04/02/2008	4.8	5.33	89	<0.5	<0.7	<0.8	<0.7	24	13	<0.5	11	<0.7	47	<0.5	<1.1	<0.8	<0.7	6.6	<0.7	<0.5	<0.5	<0.7	53
MW #83	09/11/2008		5.04	<0.5	<0.5	<0.5	<1	<0.5	12	5.3	<0.5	6	11	26	<0.5	<0.5	<0.6	9.9	<0.5	<0.5	<0.6	<0.5	<0.5	29
MW #83	03/31/2009	7.2	5.32	6.2	<0.5	<0.5	<1	<0.5	15	5.5	<0.5	6.3	<0.5	40	<0.5	<0.5	<0.6	15	<0.5	<0.5	<0.6	<0.5	<0.5	44
MW #83	09/21/2009	7.3	2.22	<5	<5	<5	<10	<5	57	5.3	<5	<5	<5	<10	<5	<5	<5	6.7	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #84	04/16/2007	7.4	2.37	<0.6	<0.5	<0.7	<0.8	<0.7	19	<0.6	<0.5	<0.5	<0.7	<1	15	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #84	09/18/2007	<0.20	1.83	<0.6	<0.5	<0.7	<0.8	<0.7	23	<0.6	<0.5	<0.5	<0.7	<1	14	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #84	04/02/2008	8.5	2.36	<0.6	<0.5	<0.7	10	<0.7	76	<0.6	<0.5	<0.5	<0.7	<1	16	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #84	09/10/2008		2.07	<0.5	<0.5	<0.5	<1	<0.5	84	<0.5	<0.5	<0.5	<0.5	<1	13	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #84	03/31/2009	11	33.9	<1	<1	<1	<2	<1	53	<1	<1	<1	<1	<2	<1	<1	<1.2	<1	<1	<1	<1.2	<1	<1	<2
MW #84	09/21/2009	10	1.36	<10	<10	<10	<20	<10	67	<10	<10	<10	<10	<20	12	<10	<10	<10	<10	<10	<10	<10	<10	<30
MW #85	04/16/2007	0.64	0.436	<0.6	<0.5	<0.7	<0.8	<0.7	11	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #86	04/16/2007	0.48	0.182	<0.6	<0.5	<0.7	<0.8	<0.7	10	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	5.3	<0.7	<1.5
MW #87	04/18/2007	0.33	0.278	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #88	04/19/2007	0.36	0.634	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #88	09/24/2007	<0.020	0.546	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #88	04/02/2008	0.47	0.479	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #88	04/07/2008																							
MW #88	09/22/2008	0.59	0.42	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #88	04/06/2009	0.4	0.298	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #88	09/23/2009	0.54	0.242	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #89	04/01/2008	0.27		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
MW #89	09/10/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #89	04/02/2009	0.14		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #89	09/17/2009	0.084		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #90	05/29/2008	2.8	0.547	6.2	<0.5	<0.5	<1	<0.5	<1	8	<0.5	<0.5	51	<1	<0.5	5.9	<0.6	17	<0.5	12	<0.6	<0.5	<0.5	<1
MW #90	09/25/2008	2.6	0.402	<0.5	<0.5	<0.5	<1	<0.5	<1	29	<0.5	<0.5	48	<1	<0.5	7.1	<0.6	20	<0.5	9.6	<0.6	<0.5	<0.5	<1
MW #90	04/15/2009	1.9	0.44	<0.5	<0.5	<0.5	<1	<0.5	<1	20	<0.5	<0.5	55	<1	<0.5	<0.5	<0.6	15	<0.5	9.9	<0.6	<0.5	<0.5	<1
MW #90	10/01/2009	2	0.244	<5	<5	<5	<10	<5	<10	14	<5	<5	32	<10	<5	<5	<5	9.1	<5	<5	<5	<5	<5	<15
MW #91	05/29/2008	2.3	20.5	200	<0.5	45	46	<0.5	38	2200	<0.5	1300	120	940	<0.5	54	13	130	260	14	<0.6	3100	<0.5	1200
MW #91	09/16/2008	2.4	11.4	140	<0.5	26	20	<0.5	16	1600	<0.5	960	95	540	<0.5	32	9.9	100	<0.5	12	<0.6	780	<0.5	660
MW #91	04/15/2009	2.1	15.3	140	<0.5	34	29	<0.5	20	1900	<0.5	1100	120	940	<0.5	43	11	120	190	14	<0.6	2200	<0.5	1100
MW #91	10/01/2009	2.6	27.5	150	<5	41	64	<5	42	3900	<5	1500	110	1400	<5	57	6.5	89	380	7.2	<5	4800	<5	1800
MW #92	05/29/2008	6.3	6.78	20	<0.5	37	<1	<0.5	<1	2500	48	530	80	77	110	190	15	94	9.3	16	11	18	19	86
MW #92	09/25/2008	3.3	6.18	9.1	<0.5	<0.5	<1	<0.5	<1	1400	0.015	290	64	55	38	84	14	91	7.2	14	17	14	31	62
MW #92	04/15/2009	4.4	6.79	6.6	<0.5	<0.5	<1	<0.5	<1	1800	28	220	68	50	68	90	14	82	6.2	13	7.9	16	20	57
MW #92	10/01/2009	4.9	9.45	<5	<5	12	<10	<5	<10	3600	94	260	44	35	260	110	6.9	51	5.3	6.3	<5	18	<5	40
MW #93	05/29/2008	4.1	6.85	190	<0.5	<0.5	<1	5.2	<1	2000	<0.5	7.1	61	400	<0.5	11	8.8	80	<0.5	8.8	<0.6	5.9	<0.5	400
MW #93	09/25/2008	9.9	7.51		<0.5		<1		<1	1800		19		460							<0.6	<0.5	<0.5	460
MW #93	04/15/2009	1.2	10.4	300	<0.5	25	<1	6.7	<1	2700	<0.5	40	96	790	<0.5	110	12	130	<12	12	<0.6	12	<0.5	790
MW #93	10/01/2009	1.9	5.08	190	<5	16	<10	<5	<10	1300	<5	13	49	380	<5	64	5.6	63	<120	5.8	<5	5.3	<5	380
MW #95	05/29/2008	2.6	4.31	<0.5	<0.5	<0.5	<1	<0.5	<1	110	<0.5	6	28	<1	<0.5	8.8	<0.6	12	<0.5	6.9	<0.6	<0.5	<0.5	<1
MW #95	09/16/2008	1.3	0.365	<0.5	<0.5	<0.5	<1	<0.5	<1	47	<0.5	<0.5	15	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #95	04/15/2009	1.6	0.273	<0.5	<0.5	<0.5	<1	<0.5	<1	23	<0.5	<0.5	16	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
MW #95	10/01/2009	1.2	0.113	<5	<5	<5	<10	<5	<10	<5	<5	<5	11	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
MW #96	05/29/2008	3.3	56.4	<0.5	<0.5	<0.5	<1	<0.5	<1	12	<0.5	9.7	140	24	57000	9.1	15	140	<0.5	20	<0.6	<0.5	<0.5	28
MW #96	09/25/2008	3.9	42.6	<0.5	<0.5	<0.5	<1	<0.5	<1	9.7	<0.5	8.1	130	20	63000	7.2	14	130	<0.5	19	<0.6	<0.5	<0.5	23
MW #96	04/15/2009	2.4	37.3	<0.5	<0.5	20	<1	<0.5	<1	6.8	<0.5	6.1	140	21	63000	<0.5	11	120	<0.5	17	<0.6	<0.5	<0.5	24
MW #96	10/01/2009	1.6	35.2	<5	<5	11	<10	<5	<10	<5	<5	<5	77	12	53000	<5	<5	67	<5	7.7	<5	<5	<5	<15
MW #98	05/30/2008	2.5	18.7	150	<0.5	27	<1	<0.5	<1	8100	<0.5	330	88	400	5.8	83	11	110	<0.5	13	<0.6	270	<0.5	440
MW #98	09/25/2008	2	28.7	210	<0.5	32	<1	7	<1	7500	<0.5	450	130	560	<0.5	120	22	160	<0.5	17	<0.6	250	<0.5	<1
MW #98	04/15/2009	2.5	22.9	160	<0.5	34	<1	<0.5	<1	7100	<0.5	590	120	670	<0.5	93	18	140	<12	16	<0.6	180	<0.5	700
MW #98	09/28/2009	2.7	33.9	320	<5	95	<10	<5	20	7700	<5	1200	98	1200	<5	170	17	110	<250	9.8	<5	210	<5	1300
MW #99	09/25/2008	0.93	31.5	26	<0.5	<0.5	<1	<0.5	<1	9800	<0.5	120	71	150	4900	9.9	9.6	93	52	10	<0.6	420	<0.5	200
MW #99	04/15/2009	0.7	2.04	<0.5	<0.5	<0.5	<1	<0.5	<1	550	<0.5	41	8.6	13	97	<0.5	<0.6	8.6	13	<0.5	<0.6	<0.5	<0.5	26
MW #99	09/28/2009	0.59	29.2	82	<5	12	<10	<5	<10	9200	<5	380	36	440	5900	27	<5	40	170	<5	<5	750	<5	610
MW #101	05/30/2008	1.2	3.82	5.3	<0.5	<0.5	<1	<0.5	<1	730	<0.5	47	9.1	16	85	5.2	<0.6	9.3	<0.5	<0.5	<0.6	<0.5	<0.5	16
MW #101	09/16/2008	1	2.51	5.4	<0.5	<0.5	<1	<0.5	<1	680	<0.5	490	8.5	16	99	5.9	<0.6	9.1	<0.5	<0.5	<0.6	<0.5	<0.5	16
MW #101	04/15/2009	0.83	24.4	42	<0.5	7.1	<1	<0.5	<1	4700	<0.5	150	62	200	2600	14	6.4	73	87	7.5	<0.6	220	<0.5	280
MW #101	09/28/2009	0.81	0.736	<5	<5	<5	<10	<5	<10	180	<5	8.5	<5	<10	100	<5	<5	<5	<5	<5	<5	<5	<5	<15
MW #103	09/26/2008	2.5	20.7	380	<0.5	100	24	<0.5	29	1200	<0.5	1100	100	1000	<0.5	280	25	130	300	13	<0.6	380	<0.5	1300
MW #103	03/16/2009	3.9	9.54	220	<0.5	110	<1	<0.5	22	1000	<0.5	610	52	320	<0.5	190	11	69	89	8	<0.6	120	<0.5	410
MW #103	09/28/2009	1.6	5.15	100	<5	39	<10	<5	17	860	<5	350	20	140	<5	90	<5	25	34	<5	<5	22	<5	170
MW #104	09/26/2008	1.3	3.12	<0.5	<0.5	<0.5	170	<0.5	29	230	<0.5	120	170	<1	<0.5	6.3	14	50	<0.5	62	<0.6	<0.5	<0.5	<1
MW #104	03/16/2009	0.85	1.61	<0.5	<0.5	<0.5	<1	<0.5	<1	34	<0.5	<0.5	110	<1	<0.5	<0.5	<0.6	25	<0.5	57	<0.6	<0.5	<0.5	<1
MW #104	09/28/2009	0.5	1.08	<5	<5	<5	<10	<5	<10	190	<5	10	83	<10	<5	<5	<5	25	<5	31	<5	<5	<5	<15
MW #106	09/28/2009	3.2	37.8	290	<5	36	12	<5	15	15000	<5	1100	92	560	39	180	15	100	<250	9.2	<5	260	<5	560
MW #107	09/28/2009	2.8	44.3	320	<5	89	<10	<5	21	14000	<5	1400	84	570	7400	190	17	97	<250	9.6	<5	36	<5	570
MW #108	10/01/2009	8.2	2.55	75	<5	11	<10	<5	17	480	<5	96	38	110	<5	98	9.4	36	<5	8.4	<5	11	<5	110
NCL #32	04/25/2007	0.12		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NCL #32	10/01/2007	0.42		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NCL #32	04/08/2008	0.17		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #32	09/16/2008	0.38		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #32	04/10/2009	2.1		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #32	09/24/2009	0.21		<5	<5	<5	<10	<5	14	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NCL #33	04/25/2007	0.68		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NCL #33	10/01/2007	1		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NCL #33	04/09/2008	0.49		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #33	09/29/2008	1.4		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #33	04/10/2009	0.52		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #33	09/24/2009	0.6		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
NCL #34	04/25/2007	1.6		24	<0.5	<0.7	<0.8	<0.7	<2.5	970	<0.5	160	94	53	<0.5	17	6.1	70	<0.5	17	<0.5	<0.5	<0.7	53
NCL #34	10/01/2007	1.5		27	<0.5	21	<0.8	<0.7	<2.5	1000	<0.5	200	87	52	<0.5	20	8	73	<0.5	16	<0.5	<0.5	<0.7	52
NCL #34	04/09/2008	2.7		370	<0.5	<0.5	<1	<0.5	<1	1200	<0.5	310	100	85	<0.5	29	8.8	90	<0.5	18	<0.6	<0.5	<0.5	85
NCL #34	09/16/2008	2.1		27	<0.5	<0.5	<1	<0.5	<1	590	<0.5	150	96	44	<0.5	13	8.6	85	<0.5	19	<0.6	<0.5	<0.5	44
NCL #34	04/10/2009	0.12		120	<0.5	81	<1	<0.5	<1	2500	<0.5	170	160	260	<0.5	25	10	140	<0.5	23	<0.6	<0.5	<0.5	260
NCL #34	09/24/2009	1.7		96	<5	<5	<10	<5	<10	1800	<5	11	110	220	<5	7.1	6.2	91	<5	13	<5	<5	<5	220
NCL #44	04/25/2007	0.86		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NCL #44	10/01/2007	0.93		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NCL #44	04/08/2008	0.63		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #44	09/16/2008	1.4		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #44	04/10/2009	0.62		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #44	09/24/2009	0.66		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NCL #49	04/23/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NCL #49	09/25/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NCL #49	04/07/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #49	09/12/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #49	04/08/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NCL #49	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #1	10/10/2006			<5	<5	<5	<10	<5	<10	32	<5	5.9	<5	<10	290	<5	<5	<5	<5	<5	<5	5	<5	<15
NP #1	12/18/2006			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	400	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #1	04/23/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	250	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #1	09/26/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	250	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #1	04/03/2008			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	190	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #1	09/23/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	230	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #1	04/08/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	150	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #1	09/30/2009			<5	<5	<5	<10	<5	18	<5	<5	<5	<5	<10	130	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #2	10/10/2006			<5	<5	<5	<10	<5	<10	88	<5	13	<5	16	<5	<5	<5	<5	<5	<5	<5	13	<5	17
NP #2	12/18/2006			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #2	04/23/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #2	09/26/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #2	04/03/2008			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #2	09/23/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #2	04/08/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #2	09/30/2009			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	**Date**	**DRO**	**GRO**	**1,2,4-Trimethyl benzene**	**1,2-Dichloro ethane**	**1,3,5-Trimethyl benzene**	**2-Butanone**	**4-Isopropyl toluene**	**Acetone**	**Benzene**	**cis-1,2-Dichloro ethene**	**Ethyl benzene**	**Isopropyl benzene**	**m,p-Xylene**	**Methyl tert-butyl ether**	**Naphthalene**	**n-Butyl benzene**	**n-Propyl benzene**	**o-Xylene**	**sec-Butyl benzene**	**Tetra chloro ethene**	**Toluene**	**Tri chloro ethene**	**Total Xylenes**
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
NP #3	10/12/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #3	12/11/2006			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #3	04/19/2007	**0.055**		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #3	09/26/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #3	04/07/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #3	09/23/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #3	04/03/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #3	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #5	10/03/2006	<0.050		<5	<5	<5	<10	<5	<10	***9.7***	<5	**8.7**	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #5	12/15/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #5	04/19/2007	<0.010	**0.0748**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #5	10/02/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #5	04/07/2008	***1.5***		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #5	09/23/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #5	04/08/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #5	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #6	10/10/2006	<0.050		<5	<5	<5	<10	<5	<10	***8.8***	<5	<5	<5	<10	**10**	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #6	12/18/2006	**0.084**		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**19**	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #6	04/23/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**18**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #6	09/26/2007	<0.020		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**15**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #6	04/03/2008	<0.02		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**22**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #6	09/23/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #6	04/08/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #6	10/05/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #9	10/03/2006	<0.050		<5	<5	<5	<10	<5	<10	***8.2***	<5	**8.2**	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #9	12/27/2006	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
NP #9	04/27/2007	<0.010		<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
NP #9	04/28/2008	<0.02		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #9	09/30/2008	**0.082**		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #9	04/10/2009	<0.020		<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
NP #9	09/24/2009	<0.050		<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
OCD #1R	09/25/2007	***0.28***	**0.105**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #1R	04/01/2008	**0.16**	**0.111**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #1R	09/15/2008	**0.15**	**0.0514**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #1R	04/01/2009	**0.054**	**0.0552**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #1R	09/21/2009	**0.12**	<0.0500	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	**Date**	**DRO**	**GRO**	**1,2,4-Trimethyl benzene**	**1,2-Dichloro ethane**	**1,3,5-Trimethyl benzene**	**2-Butanone**	**4-Isopropyl toluene**	**Acetone**	**Benzene**	**cis-1,2-Dichloro ethene**	**Ethyl benzene**	**Isopropyl benzene**	**m,p-Xylene**	**Methyl tert-butyl ether**	**Naphthalene**	**n-Butyl benzene**	**n-Propyl benzene**	**o-Xylene**	**sec-Butyl benzene**	**Tetra chloro ethene**	**Toluene**	**Tri chloro ethene**	**Total Xylenes**
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
OCD #2A	09/25/2007	<0.020	<0.020	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #2A	04/01/2008	<0.02	<0.02	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #2A	09/15/2008	<0.02	<0.02	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #2A	04/01/2009	<0.020	<0.020	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #2A	09/22/2009	<0.050	<0.0500	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
OCD #3	09/25/2007	<0.020	<0.020	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #3	04/01/2008	<0.02	<0.02	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #3	09/15/2008	<0.02	<0.02	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #3	04/01/2009	<0.020	<0.020	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #3	09/22/2009	<0.050	<0.0500	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
OCD #4	09/25/2007	<0.020	<0.020	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #4	04/01/2008	<0.02	<0.02	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #4	09/15/2008	<0.02	<0.02	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #4	04/01/2009	<0.020	<0.020	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #4	09/22/2009	<0.050	<0.0500	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
OCD #5	09/25/2007	**0.071**	**0.25**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #5	04/01/2008	**0.1**	**0.136**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #5	09/15/2008	**0.12**	**0.498**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #5	04/01/2009	***0.22***	**0.263**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #5	09/22/2009	***0.21***	**0.319**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
OCD #6	09/19/2007	***1.5***	**0.694**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #6	04/02/2008	***1.1***	**0.635**	<0.6	<0.5	<0.7	<0.8	<0.7	**19**	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #6	09/17/2008	***1.1***	**0.636**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #6	04/01/2009	***0.83***	**0.527**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #6	09/21/2009	***0.89***	**0.486**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
OCD #7A	09/19/2007	***2.1***	**1.58**	<0.6	<0.5	<0.7	<0.8	<0.7	**14**	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #7A	04/02/2008	***2.6***	**1.71**	<0.6	<0.5	<0.7	<0.8	<0.7	**26**	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #7A	09/17/2008	***2.2***	**1.84**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #7A	04/01/2009	***1.7***	**1.35**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #7A	09/21/2009	***1.7***	**1.15**	<5	<5	<5	<10	<5	**14**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
OCD #8A	09/19/2007	***1.4***	**0.906**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**9.3**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #8A	04/01/2008	***1.6***	**1.21**	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**0.0083**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
OCD #8A	09/15/2008	***1.6***	**1.1**	<0.5	<0.5	<0.5	<1	<0.5	**10**	<0.5	<0.5	<0.5	<0.5	<1	**8.7**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #8A	04/02/2009	***0.93***	**1.07**	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**9**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
OCD #8A	09/22/2009	***1.6***	**0.757**	<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**8.4**	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	Date	DRO	GRO	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	4-Isopropyl toluene	Acetone	Benzene	cis-1,2-Dichloro ethene	Ethyl benzene	Isopropyl benzene	m,p-Xylene	Methyl tert-butyl ether	Naphthalene	n-Butyl benzene	n-Propyl benzene	o-Xylene	sec-Butyl benzene	Tetra chloro ethene	Toluene	Tri chloro ethene	Total Xylenes
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
RW #1	04/15/2005									1400		150				25					77	21		230
RW #1	10/03/2006			270	17	7.7	<10	<5	<10	840	8.2	120	55	250	13	20	17	71	12	14	110	10	270	260
RW #1	12/28/2006			250	<5	17	<10	11	<10	2900	83	180	54	250	130	53	18	65	81	14	93	190	270	330
RW #1	04/25/2007			260	<0.5	51	15	<0.7	28	2600	100	190	42	320	110	120	15	34	190	12	140	180	630	510
RW #1	04/09/2008			590	<0.5	140	<1	35	<1	1700	100	270	66	380	47	500	100	91	200	53	110	120	810000	580
RW #1	09/30/2008			370	<0.5	62	<1	16	<1	2100	160	300	57	240	24	160	33	69	130	22	71	160	1500	360
RW #1	04/16/2009			130	<0.5	10	<1	<0.5	<1	990	110	110	29	150	39	28	10	32	23	8.9	42	21	760	170
RW #1	10/01/2009			590	<5	150	<10	24	<10	1900	360	430	82	390	46	340	54	110	280	39	140	310	660	670
RW #18	10/17/2006			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
RW #18	12/11/2006			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
RW #18	04/20/2007		0.517	<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RW #18	09/27/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RW #18	04/07/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
RW #18	09/24/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
RW #18	04/07/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
RW #18	09/29/2009			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
TEL #1	04/08/2008	1.9	0.594	9.5	<0.5	<0.5	<1	<0.5	<1	17	<0.5	<0.5	14	11	5.6	<0.5	<0.6	<0.5	6.6	<0.5	<0.6	<0.5	<0.5	17
TEL #1	09/25/2008	2.6	0.513	5.8	<0.5	<0.5	<1	<0.5	<1	19	<0.5	<0.5	15	14	7.2	<0.5	<0.6	<0.5	7.1	5.3	<0.6	<0.5	<0.5	21
TEL #1	04/16/2009	1.7	0.567	<0.5	<0.5	<0.5	<1	<0.5	13	<0.5	<0.5	<0.5	13	<1	7	<0.5	<0.6	<0.5	6.5	<0.5	<0.6	<0.5	<0.5	<1
TEL #1	09/25/2009	2.9	0.4	<5	<5	<5	<10	<5	<10	<5	<5	<5	6.9	<10	7.3	<5	<5	<5	<5	<5	<5	<5	<5	<15
TEL #2	04/08/2008	5.1	5.13	170	<0.5	18	<1	<0.5	<1	1100	<0.5	21	59	210	15	25	7.5	62	13	8.1	<0.6	60	<0.5	230
TEL #2	09/25/2008	8.1	8.76	210	<0.5	30	<1	<0.5	<1	2200	<0.5	43	67	290	11	58	9.2	78	20	9.1	<0.6	110	<0.5	310
TEL #2	04/16/2009	3.3	5.08	150	<0.5	22	<1	<0.5	21	1200	<0.5	12	60	190	17	27	9.2	63	12	8.4	<0.6	43	<0.5	200
TEL #2	NS																							
TEL #3	04/08/2008	2.2	1.25	63	<0.5	15	<1	<0.5	<1	100	<0.5	<0.5	73	22	17	<0.5	<0.6	10	<0.5	14	<0.6	<0.5	<0.5	24
TEL #3	04/16/2009	2.6	2.04	48	<0.5	12	<1	<0.5	<1	540	<0.5	<0.5	76	27	41	<0.5	<0.6	17	<0.5	13	<0.6	6	<0.5	30
TEL #3	09/25/2009	1.4	0.814	37	<5	8.8	<10	<5	<10	44	<5	<5	78	13	<5	<5	<5	12	<5	11	<5	<5	<5	<15
TEL #4	04/26/2007	2.9	5.79	200	<0.5	95	<0.8	<0.7	<2.5	410	<0.5	110	65	210	100	16	9.7	79	200	14	<0.5	14	<0.7	400
TEL #4	09/28/2007	1.6	3.78	150	<0.5	<0.7	<0.8	6.8	<2.5	65	<0.5	57	51	92	180	11	13	69	<0.5	15	<0.5	<0.5	<0.7	94
TEL #4	04/08/2008	3.3	4.4	160	<0.5	73	<1	<0.5	<1	51	<0.5	49	58	87	190	6.2	12	77	<0.5	19	<0.6	<0.5	<0.5	87
TEL #4	09/25/2008	2.6	3.17	160	<0.5	<0.5	<1	6.8	<1	27	<0.5	43	54	61	190	7.7	13	80	<0.5	18	<0.6	<0.5	<0.5	63
TEL #4	04/16/2009	1.8	2.61	<0.5	<0.5	55	<1	<0.5	<1	38	<0.5	24	47	41	210	<0.5	8.9	69	<0.5	16	<0.6	<0.5	<0.5	42
TEL #4	09/25/2009	1.9	1.92	91	<5	36	<10	<5	<10	12	<5	13	39	27	200	<5	7.6	54	<5	13	<5	<5	<5	28
RA #313	10/02/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #313	03/31/2008			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #313	09/30/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
RA #314	10/02/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #314	03/31/2008			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #314	09/30/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Total Petroleum Hydrocarbons (mg/L)		Organic Compounds (ug/L)																				
Sample ID	**Date**	**DRO**	**GRO**	**1,2,4-Trimethyl benzene**	**1,2-Dichloro ethane**	**1,3,5-Trimethyl benzene**	**2-Butanone**	**4-Isopropyl toluene**	**Acetone**	**Benzene**	**cis-1,2-Dichloro ethene**	**Ethyl benzene**	**Isopropyl benzene**	**m,p-Xylene**	**Methyl tert-butyl ether**	**Naphthalene**	**n-Butyl benzene**	**n-Propyl benzene**	**o-Xylene**	**sec-Butyl benzene**	**Tetra chloro ethene**	**Toluene**	**Tri chloro ethene**	**Total Xylenes**
		NMED TPH		EPA TW	MCL	EPA TW	NMED TW		NMED TW	MCL	MCL	MCL	NMED TW	NMED TW	NMED TW	WQCC			NMED TW		MCL	WQCC	MCL	WQCC
		2.00E-01	-	1.50E+01	5.00E+00	1.20E+01	7.06E+03	-	2.18E+04	5.00E+00	7.00E+01	7.00E+02	6.79E+02	1.43E+03	1.25E+02	3.00E+01	-	-	1.43E+03	-	5.00E+00	7.50E+02	5.00E+00	6.20E+02
RA #3156	09/17/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #3156	03/31/2008			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #3156	09/30/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
RA #3156	04/16/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
RA #3156	09/30/2009			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
RA #3353	10/02/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #4196	10/02/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**8.9**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #4196	03/31/2008			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #4196	09/30/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**7.1**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
RA #4196	04/16/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
RA #4196	09/30/2009			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**5.4**	<5	<5	<5	<5	<5	<5	<5	<5	<15
RA #4798	10/02/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	**13**	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #4798	03/31/2008			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
RA #4798	03/31/2008																							
RA #4798	09/30/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	**5**	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
RA #4798	04/16/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
RA #4798	09/30/2009			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	**18**	<5	<5	<5	<5	<5	<5	<5	<5	<15
La Rue Well	09/17/2007			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
La Rue Well	03/31/2008			<0.6	<0.5	<0.7	<0.8	<0.7	<2.5	<0.6	<0.5	<0.5	<0.7	<1	<0.5	<1.1	<0.8	<0.7	<0.5	<0.7	<0.5	<0.5	<0.7	<1.5
La Rue Well	09/30/2008			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
La Rue Well	04/16/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
La Rue Well	09/30/2009			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
UG #1	08/06/2008	<0.02	<0.02	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
UG #1	04/09/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
UG #1	10/02/2009			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
UG #2	08/06/2008	**0.16**	<0.02	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
UG #2	04/09/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
UG #2	10/02/2009			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15
UG #3R	04/09/2009			<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<1
UG #3R	10/02/2009			<5	<5	<5	<10	<5	<10	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<15

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	**Date**	**Aluminum**	**Arsenic**	**Barium**	**Beryllium**	**Boron**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Vanadium**	**Zinc**
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
KWB #1A	10/17/2006		0.00772	0.0104			<0.002	<0.005				<0.005	340		<0.0002			<0.005	<0.005	0.0171	
KWB #1A	04/20/2007	0.0201	<0.0018	0.00784	<0.00030	0.681	<0.00015	<0.00050	<0.00010	<0.00030	0.455	<0.00020	356	0.224	<0.000042	0.0146	0.006	<0.0017	<0.00020	0.0104	<0.0015
KWB #1A	09/27/2007	0.013	<0.0018	0.00813	<0.00030	0.746	<0.00015	<0.00050	<0.00010	<0.00030	0.225	<0.00020	305	0.212	<0.000042	0.0182	0.00727	<0.0017	<0.00020	0.0147	<0.0015
KWB #1A	04/28/2008	0.0178	<0.0012	0.00963	<0.001	0.671	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	309	0.222	<0.000042	0.0166	0.00682	<0.0022	<0.0007	0.0152	<0.0017
KWB #1A	09/24/2008	<0.0019	<0.0012	0.00863	<0.001	0.796	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	338	0.231	<0.000042	0.0171	0.00907	<0.0022	<0.0007	0.0149	<0.0017
KWB #1A	04/07/2009		<0.0018	<0.0014			<0.0012	<0.0012				<0.00080	308					<0.0050	<0.0014		
KWB #1A	09/29/2009		0.00709	0.00975			<0.00200	<0.00500				<0.00500	322		<0.000200			<0.00500	<0.00500		
KWB #1C	10/17/2006		0.008	0.0124			<0.002	<0.005				<0.005	331		<0.0002			<0.005	<0.005	0.00843	
KWB #1C	12/11/2006		0.00846	0.0116			<0.002	<0.005				<0.005	311		<0.0002			<0.005	<0.005	0.00963	
KWB #1C	04/20/2007	<0.0016	<0.0018	0.00881	<0.00030	0.674	<0.00015	<0.00050	0.00501	<0.00030	<0.025	<0.00020	286	0.269	<0.000042	0.0161	0.00721	<0.0017	<0.00020	0.0076	<0.0015
KWB #1C	09/27/2007	<0.0016	<0.0018	0.00965	<0.00030	0.622	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	302	0.257	<0.000042	0.0154	0.00667	<0.0017	<0.00020	0.00823	<0.0015
KWB #1C	04/07/2008	0.0104	<0.0018	0.00961	<0.0003	0.793	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	293	0.259	<0.000042	0.0164	0.00661	<0.0017	<0.0002	0.0137	0.0062
KWB #1C	09/24/2008	<0.0019	<0.0012	0.00904	<0.001	0.675	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	291	0.257	<0.000042	0.0146	0.00838	<0.0022	<0.0007	0.00922	<0.0017
KWB #1C	04/07/2009		<0.0018	0.0104			<0.0012	<0.0012				<0.00080	293					<0.0050	<0.0014		
KWB #1C	09/29/2009		<0.00500	0.00846			<0.00200	<0.00500				<0.00500	300		<0.000200			<0.00500	<0.00500		
KWB #P2	10/18/2006		0.0216	0.128			<0.002	0.0156				0.00958	322		<0.0002			0.0192	<0.005	0.0742	
KWB #P2	12/15/2006	0.526	0.00514	0.0174	<0.002	0.342	<0.002	<0.005	<0.005	<0.005	0.42	<0.005	318	0.0725	<0.0002	<0.005	<0.005	0.0165	<0.005	0.0135	0.0142
KWB #P2	09/30/2008	94.2	0.0217	1.33	0.00462	0.36	<0.001	0.0824	0.0273	0.0556	73.3	0.055	336	2.11	<0.000042	0.00502	0.0582	0.023	<0.0007	0.21	0.241
KWB #P2	04/09/2009		<0.0018	0.0703			<0.0012	<0.0012				<0.00080	294		<0.000042			0.0102	<0.0014		
KWB #2R	10/10/2006		0.0629	0.448			<0.002	<0.005				<0.005	151		<0.0002			<0.005	<0.005	<0.005	
KWB #2R	12/11/2006		0.0162	0.35			<0.002	<0.005				<0.005	139		<0.0002			<0.005	<0.005	<0.005	
KWB #3R	10/17/2006		0.0131	0.0173			<0.002	<0.005				<0.005	320		<0.0002			0.036	<0.005	0.0171	
KWB #3R	12/18/2006	0.542	0.00562	0.0185	<0.002	0.463	<0.002	<0.005	<0.005	<0.005	0.434	<0.005	354	0.014	<0.0002	<0.005	<0.005	0.0397	<0.005	0.0192	0.0111
KWB #3R	04/24/2007	3.33	<0.0018	0.0287	<0.00030	0.402	<0.00015	<0.00050	<0.00010	<0.00030	1.84	<0.00020	278	0.0218	<0.000042	<0.0017	<0.00030	0.0245	<0.00020	0.0194	0.0152
KWB #3AR	09/17/2007	1.94	0.00529	0.022	<0.00030	0.388	<0.00015	<0.00050	<0.00010	<0.00030	1.2	<0.00020	284	0.0266	<0.000042	<0.0017	<0.00030	0.0343	<0.00020	0.0198	0.0106
KWB #3AR	04/07/2008	3.71	<0.0018	0.0354	<0.0003	0.53	<0.00015	<0.0005	<0.0001	<0.0003	2.34	<0.0002	260	0.0379	<0.000042	<0.0017	<0.0003	0.0191	<0.0002	0.0241	0.0183
KWB #3AR	09/24/2008	1.21	<0.0012	0.0187	<0.001	0.472	<0.001	<0.0007	<0.0008	0.00516	0.729	<0.0012	320	0.0128	<0.000042	<0.0009	0.00598	0.0194	<0.0007	0.0188	0.00795
KWB #3AR	04/09/2009		<0.0018	0.0242			<0.0012	<0.0012				<0.00080	273		<0.000042			0.0146	<0.0014		
KWB #3AR	09/29/2009		0.00559	0.0159			<0.00200	<0.00500				<0.00500	307		<0.000200			0.0183	<0.00500		
KWB #5	10/10/2006		0.0132	2.17			<0.002	<0.005				<0.005	104		<0.0002			<0.005	<0.005	<0.005	
KWB #5	12/11/2006		0.0163	2.01			<0.002	0.00514				<0.005	101		<0.0002			<0.005	<0.005	<0.005	
KWB #7	10/18/2006		0.0122	0.0585			<0.002	0.00942				<0.005	256		<0.0002			0.00675	<0.005	0.0302	
KWB #7	12/27/2006	0.0472	0.00672	0.0415	<0.002	0.469	<0.002	<0.005	0.00722	<0.005	<0.2	<0.005	223	2.52	<0.0002	0.00623	0.0392	0.00526	<0.005	0.0249	0.00759
KWB #7	04/23/2007	0.0341	<0.0018	0.0394	<0.00030	0.46	<0.00015	<0.00050	0.0067	<0.00030	<0.025	<0.00020	211	2.29	<0.000042	0.00501	0.0326	<0.0017	<0.00020	0.0227	<0.0015
KWB #7	10/02/2007	0.0531	<0.0018	0.0402	<0.00030	0.415	<0.00015	<0.00050	0.00731	<0.00030	<0.025	<0.00020	226	2.61	<0.000042	0.00512	0.0367	0.00713	<0.00020	0.0232	0.0137
KWB #7	04/07/2008	0.122	<0.0018	0.0359	<0.0003	0.482	<0.00015	<0.0005	0.00545	<0.0003	<0.025	<0.0002	188	1.4	<0.000042	<0.0017	0.0217	<0.0017	<0.0002	0.0242	<0.0015
KWB #7	09/24/2008	0.0526	<0.0012	0.0404	<0.001	0.474	<0.001	<0.0007	0.00597	<0.0009	<0.1	<0.0012	284	2.29	<0.000042	<0.0009	0.0365	0.0105	<0.0007	0.0202	<0.0017
KWB #7	04/07/2009		<0.0018	0.0343			<0.0012	<0.0012				<0.00080	202					0.0135	<0.0014		
KWB #7	10/05/2009		0.00529	0.0331			<0.00200	<0.00500				<0.00500	224		<0.000200			0.0069	<0.00500		

Table A-1
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2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	**Date**	**Aluminum**	**Arsenic**	**Barium**	**Beryllium**	**Boron**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Vanadium**	**Zinc**
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
KWB #9	09/29/2006		<0.005	**0.0102**			<0.001	<0.002				<0.005	**184**		<0.0002			<0.005	<0.005	**0.00735**	
KWB #9	12/15/2006	**0.0168**	**0.00675**	**0.011**	<0.002	**0.432**	<0.002	<0.005	<0.005	<0.005	<0.2	<0.005	**174**	**0.0205**	<0.0002	<0.005	<0.005	<0.005	<0.005	**0.00915**	<0.005
KWB #9	04/24/2007	**0.0728**	<0.0018	**0.0105**	<0.00030	**0.404**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**170**	**0.0391**	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	**0.00808**	<0.0015
KWB #9	09/17/2007	<0.0016	<0.0018	**0.00976**	<0.00030	**0.367**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**165**	**0.0266**	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	**0.00796**	<0.0015
KWB #9	04/07/2008	<0.0016	<0.0018	**0.0104**	<0.0003	**0.438**	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**161**	**0.0226**	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	**0.00766**	<0.0015
KWB #9	09/24/2008	**0.0181**	<0.0012	**0.0116**	<0.001	**0.43**	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**180**	**0.0225**	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	**0.00826**	**0.00513**
KWB #9	04/08/2009		<0.0018	**0.0109**			<0.0012	<0.0012				<0.00080	**176**					<0.0050	<0.0014		
KWB #9	09/29/2009		<0.00500	**0.0113**			<0.00200	<0.00500				<0.00500	**179**		<0.000200			**0.0064**	<0.00500		
KWB #10	10/17/2006		***0.0532***	**0.684**			<0.002	**0.00933**				<0.005	**94.7**		<0.0002			<0.005	<0.005	<0.005	
KWB #10	12/11/2006		***0.0527***	**0.682**			<0.002	**0.00884**				<0.005	**93.3**		<0.0002			<0.005	<0.005	<0.005	
KWB #10	04/20/2007	**0.0134**	***0.0452***	**0.59**	<0.00030	**0.253**	<0.00015	<0.00050	**0.00523**	<0.00030	**0.606**	<0.00020	**84.2**	***0.464***	<0.000042	<0.0017	**0.0108**	<0.0017	<0.00020	<0.00040	<0.0015
KWB #10	09/27/2007	<0.0016	***0.0428***	**0.574**	<0.00030	**0.249**	<0.00015	<0.00050	<0.00010	<0.00030	**0.58**	<0.00020	**83.2**	***0.464***	<0.000042	<0.0017	**0.0109**	<0.0017	<0.00020	<0.00040	<0.0015
KWB #10	04/07/2008	**0.238**	***0.0455***	**0.639**	<0.0003	**0.299**	<0.00015	<0.0005	<0.0001	<0.0003	**0.648**	<0.0002	**90**	***0.481***	<0.000042	<0.0017	**0.0119**	<0.0017	<0.0002	<0.0004	<0.0015
KWB #10	09/24/2008	**0.0538**	***0.0451***	**0.558**	<0.001	**0.281**	<0.001	<0.0007	**0.0053**	<0.0009	**0.709**	<0.0012	**99.1**	***0.519***	<0.000042	<0.0009	**0.0125**	<0.0022	<0.0007	<0.0014	<0.0017
KWB #10	04/07/2009											***0.0196***									
KWB #10	09/29/2009																				
KWB #11A	10/18/2006		***0.0107***	**0.0206**			<0.002	**0.0129**				<0.005	**144**		<0.0002			<0.005	<0.005	**0.018**	
KWB #11A	12/18/2006	<0.01	<0.005	**0.0178**	<0.002	**0.406**	<0.002	<0.005	<0.005	<0.005	<0.2	<0.005	**158**	**0.0109**	<0.0002	<0.005	<0.005	<0.005	<0.005	**0.0131**	<0.005
KWB #11A	04/23/2007	<0.0016	<0.0018	**0.0143**	<0.00030	**0.34**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**124**	**0.0181**	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	**0.0119**	<0.0015
KWB #11A	09/26/2007	<0.0016	<0.0018	**0.0177**	<0.00030	**0.343**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**134**	**0.0125**	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	**0.0122**	<0.0015
KWB #11A	04/07/2008	**0.01**	<0.0018	**0.0167**	<0.0003	**0.388**	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**156**	**0.0127**	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	**0.013**	<0.0015
KWB #11A	09/24/2008	**0.0157**	<0.0012	**0.0187**	<0.001	**0.351**	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**192**	**0.0197**	<0.000042	<0.0009	<0.0011	**0.00822**	<0.0007	**0.0127**	<0.0017
KWB #11A	04/07/2009		<0.0018	**0.0215**			<0.0012	<0.0012				<0.00080	**220**					**0.0255**	<0.0014		
KWB #11A	10/05/2009		<0.00500	**0.0208**			<0.00200	<0.00500				<0.00500	**218**		<0.000200			**0.0116**	<0.00500		
KWB #12A	10/17/2006		**0.00649**	**0.0202**			<0.002	<0.005				<0.005	**252**		<0.0002			<0.005	<0.005	**0.0101**	
KWB #12A	12/15/2006	**0.0958**	**0.00654**	**0.00969**	<0.002	**0.41**	<0.002	<0.005	<0.005	<0.005	<0.2	<0.005	**243**	**0.0065**	<0.0002	<0.005	<0.005	**0.00738**	<0.005	**0.0114**	**0.00628**
KWB #12A	09/17/2007	**0.273**	<0.0018	**0.0185**	<0.00030	**0.334**	<0.00015	<0.00050	<0.00010	<0.00030	**0.21**	<0.00020	**196**	**0.00914**	<0.000042	<0.0017	<0.00030	**0.00689**	<0.00020	**0.00967**	**0.0108**
KWB #12A	09/30/2008	***7.04***	**0.00894**	**0.075**	<0.001	**0.393**	<0.001	**0.00599**	<0.0008	**0.00874**	***5.18***	**0.00791**	**233**	**0.13**	<0.000042	<0.0009	**0.0068**	**0.0108**	<0.0007	**0.0162**	**0.0476**
KWB #12A	09/29/2009		<0.00500	**0.0173**			<0.00200	<0.00500				<0.00500	**229**		<0.000200			<0.00500	<0.00500		
KWB #13	10/19/2006		**0.00871**	**0.0231**			<0.002	<0.005				<0.005	**227**		<0.0002			**0.0141**	<0.005	**0.018**	
KWB #13	12/11/2006		**0.00966**	**0.0304**			<0.002	<0.005				**0.00598**	**211**		<0.0002			**0.0214**	<0.005	**0.0238**	
KWB #13	04/23/2007	**4.07**	**0.00517**	**0.037**	<0.00030	**0.258**	<0.00015	<0.00050	<0.00010	<0.00030	***1.91***	<0.00020	**177**	**0.0341**	<0.000042	<0.0017	<0.00030	**0.0138**	<0.00020	**0.0211**	**0.0262**
KWB #13	09/25/2007	**0.416**	<0.0018	**0.0228**	<0.00030	**0.259**	<0.00015	<0.00050	<0.00010	<0.00030	**0.222**	<0.00020	**203**	**0.0124**	<0.000042	<0.0017	<0.00030	**0.0206**	<0.00020	**0.0171**	**0.0495**
KWB #13	04/09/2008	**0.399**	<0.0018	**0.0217**	<0.0003	**0.296**	<0.00015	<0.0005	<0.0001	<0.0003	**0.262**	<0.0002	**199**	**0.00877**	<0.000042	<0.0017	<0.0003	**0.0183**	<0.0002	**0.0178**	**0.0336**
KWB #13	09/24/2008	**1.3**	<0.0012	**0.0239**	<0.001	**0.29**	<0.001	<0.0007	<0.0008	<0.0009	**0.832**	<0.0012	**208**	**0.017**	<0.000042	<0.0009	<0.0011	**0.0163**	<0.0007	**0.0184**	**0.0259**
KWB #13	04/13/2009		<0.0018	**0.0186**			<0.0012	<0.0012				<0.00080	**220**		<0.000042			**0.0181**	<0.0014		
KWB #13	09/29/2009		<0.00500	**0.0183**			<0.00200	<0.00500				<0.00500	**217**		<0.000200			**0.0169**	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	Date	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #1R	09/25/2007	2.75	<0.0018	0.0452	<0.00060	0.318	<0.00015	<0.00050	<0.00010	0.0051	4.34	<0.00020	224	1.75	<0.000042	<0.0017	<0.00030	0.0065	<0.00020	0.00543	0.0161
MW #1R	04/01/2008	5.37	<0.0018	0.0718	<0.0003	0.337	<0.00015	<0.0005	<0.0001	<0.0003	5.31	<0.0002	235	1.72	<0.000042	<0.0017	0.00508	<0.0017	<0.0002	0.00813	0.0191
MW #1R	09/10/2008	4.38	0.00585	0.071	<0.001	0.317	<0.001	<0.0007	<0.0008	<0.0009	5.76	<0.0012	260	1.81	<0.000042	<0.0009	0.00538	<0.0022	<0.0007	0.00906	0.0161
MW #1R	04/02/2009		<0.0018	0.025			<0.0012	<0.0012				<0.00080	264		<0.000042			<0.0050	<0.0014		
MW #1R	09/23/2009		<0.00500	0.02			<0.00200	<0.00500				<0.00500	179		<0.000200			<0.00500	<0.00500		
MW #2A	09/25/2007	<0.0016	0.0417	0.0226	<0.00030	0.565	<0.00015	<0.00050	<0.00010	<0.00030	7.48	<0.00020	573	2.64	<0.000042	<0.0017	0.00984	0.00625	<0.00020	<0.00040	0.0142
MW #2A	04/02/2008	<0.0016	0.0353	0.0265	<0.0003	0.642	<0.00015	<0.0005	<0.0001	<0.0003	6.18	<0.0002	616	2.66	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #2A	09/17/2008	<0.0019	0.0271	0.0302	<0.001	0.755	<0.001	<0.0007	<0.0008	<0.0009	2.21	<0.0012	647	2.64	<0.000042	<0.0009	0.0122	0.00652	<0.0007	<0.0014	0.00984
MW #2A	04/01/2009		0.0142	0.0266			<0.0012	<0.0012				<0.00080	402		<0.000042			<0.0050	<0.0014		
MW #2A	09/21/2009		0.0131	0.0199			<0.00200	<0.00500				<0.00500	187		<0.000200			<0.00500	<0.00500		
MW #3	04/17/2007	0.048	0.0313	0.0147	<0.00030	0.602	<0.00015	<0.00050	<0.00010	<0.00030	0.802	<0.00020	166	2.26	<0.000042	0.0212	0.00722	<0.0017	<0.00020	<0.00040	<0.0015
MW #3	10/01/2007	0.066	0.0317	0.0164	<0.00030	0.607	<0.00015	<0.00050	<0.00010	<0.00030	0.852	<0.00020	141	1.62	<0.000042	0.0166	0.00753	<0.0017	<0.00020	<0.00040	0.00726
MW #3	04/02/2008	0.317	0.0295	0.0184	<0.0003	0.613	<0.00015	<0.0005	<0.0001	<0.0003	1.19	<0.0002	169	1.35	<0.000042	0.0159	0.00561	<0.0017	<0.0002	<0.0004	0.00512
MW #3	09/17/2008	0.0816	0.0317	0.0172	<0.001	0.68	<0.001	<0.0007	<0.0008	<0.0009	0.997	<0.0012	163	1.65	<0.000042	0.0182	0.00786	<0.0022	<0.0007	<0.0014	<0.0017
MW #3	04/01/2009		0.03	0.0145			<0.0012	<0.0012				<0.00080	144		<0.000042			<0.0050	<0.0014		
MW #3	09/21/2009		0.0413	0.0152			<0.00200	<0.00500				<0.00500	139		<0.000200			<0.00500	<0.00500		
MW #4A	04/18/2007	0.0573	0.0937	0.0129	<0.00030	0.396	<0.00015	<0.00050	<0.00010	0.00652	2.44	<0.00020	114	1.77	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #4A	04/24/2007																				
MW #4A	04/27/2007	0.0307	0.0818	0.0128	<0.00030	0.381	<0.00015	<0.00050	<0.00010	<0.00030	2.25	<0.00020	141	2.05	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #4A	09/24/2007	<0.0032	0.0832	0.0139	<0.00060	0.43	<0.00015	<0.00050	<0.00010	<0.00030	1.82	<0.00020	130	1.71	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #4A	04/02/2008	<0.0016	0.0782	0.0114	<0.0003	0.441	<0.00015	<0.0005	<0.0001	<0.0003	2.15	<0.0002	152	1.93	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #4A	09/22/2008	<0.0019	0.114	0.0154	<0.001	0.51	<0.001	<0.0007	<0.0008	<0.0009	2.16	<0.0012	155	1.8	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #4A	04/06/2009		0.093	0.0146			<0.0012	<0.0012				<0.00080	146					<0.0050	<0.0014		
MW #4A	09/23/2009		0.157	0.0127			<0.00200	<0.00500				<0.00500	162		<0.000200			<0.00500	<0.00500		
MW #5A	04/18/2007	0.268	0.259	0.013	<0.00030	1.4	<0.00015	0.0227	<0.00010	0.0268	8.88	<0.00020	828	1.5	<0.000042	0.0289	0.0271	<0.0017	<0.00020	<0.00040	<0.0015
MW #5A	09/24/2007	0.117	0.204	0.0129	<0.00030	1.34	<0.00015	0.0124	<0.00010	<0.00060	7.66	<0.00020	659	1.66	<0.000042	0.0346	0.0179	0.0086	<0.00020	<0.00040	0.0125
MW #5A	04/01/2008	42.4	0.181	0.422	<0.0003	1.35	<0.00015	0.0331	<0.0001	<0.0003	43.9	<0.0002	893	3.36	<0.000042	0.0361	0.0329	<0.0017	<0.0002	0.0642	0.0838
MW #5A	09/15/2008	23.7	0.219	0.233	<0.001	0.97	<0.001	0.0232	0.00894	0.0133	30.2	0.0126	654	1.66	<0.000042	0.0297	0.0248	0.00847	<0.0007	0.0399	0.0521
MW #5A	09/22/2009		0.232	0.0143			<0.00400	<0.0100				<0.0100	555		<0.000200			<0.0100	<0.0100		
MW #6A	09/24/2007	0.4	0.0191	0.0152	<0.00060	0.611	<0.00015	<0.00050	<0.00010	<0.00030	0.83	<0.00020	107	0.292	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #6A	04/02/2008	0.317	0.0146	0.0158	<0.0003	0.603	<0.00015	<0.0005	<0.0001	<0.0003	0.706	<0.0002	84.7	0.227	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	0.00722
MW #6A	09/15/2008	0.3	0.0176	0.0158	<0.001	0.491	<0.001	<0.0007	<0.0008	<0.0009	0.918	<0.0012	89.4	0.236	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	0.00737
MW #6A	04/01/2009		0.0141	0.0142			<0.0012	<0.0012				<0.00080	97.3		<0.000042			<0.0050	<0.0014		
MW #6A	09/21/2009		0.0112	0.0126			<0.00200	<0.00500				<0.00500	90.9		<0.000200			<0.00500	<0.00500		

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2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	Date	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #7A	04/18/2007	1.37	0.0341	0.0254	<0.00030	0.726	<0.00015	<0.00050	<0.00010	0.0138	5.78	<0.00020	249	0.436	<0.000042	0.012	0.013	<0.0017	<0.00020	<0.00040	<0.0015
MW #7A	04/23/2007																				
MW #7A	04/27/2007	4.13	0.0325	0.0614	<0.00030	0.571	<0.00015	<0.00050	<0.00010	<0.00030	7.65	<0.00020	230	0.411	<0.000042	0.0103	0.0129	<0.0017	<0.00020	0.0064	0.014
MW #7A	09/24/2007	0.0506	0.0378	0.0142	<0.00030	0.713	<0.00015	<0.00050	<0.00010	<0.00030	6.16	<0.00020	272	0.447	<0.000042	0.0123	0.0126	<0.0017	<0.00020	<0.00040	0.00587
MW #7A	04/01/2008	0.438	0.0363	0.0176	<0.0003	0.791	<0.00015	<0.0005	<0.0001	<0.0003	6.67	<0.0002	270	0.437	<0.000042	0.0122	0.0123	<0.0017	<0.0002	<0.0004	0.00542
MW #7A	09/17/2008	7.8	0.045	0.0617	<0.001	0.768	<0.001	0.00797	<0.0008	0.00768	9.59	<0.0012	240	0.44	<0.000042	0.0118	0.0157	<0.0022	<0.0007	<0.0014	0.0175
MW #7A	04/02/2009		0.0404	0.0157			<0.0012	<0.0012				<0.00080	297		<0.000042			<0.0050	<0.0014		
MW #7A	09/22/2009		0.0325	0.0146			<0.00200	<0.00500				<0.00500	260		<0.000200			<0.00500	<0.00500		
MW #8	10/10/2006		0.027	0.0135			<0.002	0.844				<0.005	298		<0.0002			0.0121	<0.005	0.116	
MW #8	12/18/2006	0.0483	0.0285	0.0135	<0.002	0.575	<0.002	0.816	0.00844	0.00926	5.03	<0.005	299	0.372	<0.0002	0.0242	0.0431	0.0121	<0.005	0.116	0.00767
MW #8	04/20/2007	0.0371	0.0332	0.0112	<0.00030	0.453	<0.00015	0.407	<0.00010	0.00566	3.67	<0.00020	256	0.261	<0.000042	0.0218	0.0161	0.00617	<0.00020	0.0964	<0.0015
MW #8	09/26/2007	0.0181	0.0138	0.0123	<0.00030	0.408	<0.00015	0.14	<0.00010	<0.00030	0.736	<0.00020	248	0.242	<0.000042	0.0185	0.0103	0.00965	<0.00020	0.0528	<0.0015
MW #8	04/03/2008	0.341	0.0876	0.0192	<0.0003	0.465	<0.00015	4.47	0.00869	0.0324	16.7	0.00593	277	0.332	<0.000042	0.045	0.223	0.0204	<0.0002	0.27	0.00672
MW #8	09/23/2008	0.0546	0.0181	0.0139	<0.001	0.505	<0.001	0.438	0.00562	0.00652	2.06	<0.0012	336	0.346	<0.000042	0.0208	0.0201	0.00919	<0.0007	0.0691	<0.0017
MW #8	04/03/2009		<0.0018	0.0141			<0.0012	0.0137				<0.00080	284		<0.000042			0.0139	<0.0014		
MW #8	10/05/2009		0.00953	0.015			<0.00200	0.0335				<0.00500	414		<0.000200			0.0222	<0.00500		
MW #9	04/03/2008	0.315	0.0263	0.0173	<0.0003	0.598	<0.00015	0.704	0.0211	0.00665	3.42	<0.0002	307	1.43	<0.000042	0.0279	0.0306	0.0405	<0.0002	0.0878	0.00536
MW #9	09/23/2008	0.0182	0.0125	0.0116	<0.001	0.62	<0.001	0.0138	<0.0008	<0.0009	<0.1	<0.0012	442	0.271	<0.000042	0.0141	0.0126	0.0515	<0.0007	0.047	<0.0017
MW #9	04/03/2009		0.0104	0.011			<0.0012	<0.0012				<0.00080	455		<0.000042			0.0348	<0.0014		
MW #9	10/05/2009		0.0106	0.0107			<0.00200	0.0056				<0.00500	386		<0.000200			0.0363	<0.00500		
MW #10	10/18/2006		0.0313	0.0155			<0.002	<0.005				<0.005	127		<0.0002			<0.005	<0.005	0.00815	
MW #10	12/14/2006	0.283	0.0285	0.0123	<0.002	0.333	<0.002	<0.005	<0.005	<0.005	0.277	<0.005	109	1.43	<0.0002	0.0156	0.0136	<0.005	<0.005	0.00614	<0.005
MW #10	04/19/2007	0.655	0.0236	0.0129	<0.00030	0.32	<0.00015	<0.00050	<0.00010	0.00669	0.467	<0.00020	106	2.02	<0.000042	0.0174	0.0147	<0.0017	<0.00020	<0.00040	<0.0015
MW #10	09/24/2007	0.485	0.025	0.0106	<0.00030	0.327	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	124	1.81	<0.000042	0.0191	0.0172	<0.0017	<0.00020	<0.00040	0.00517
MW #10	04/02/2008	1.16	0.0226	0.0173	<0.0003	0.413	<0.00015	<0.0005	<0.0001	<0.0003	0.746	<0.0002	124	1.83	<0.000042	0.0194	0.0187	<0.0017	<0.0002	0.00647	0.00611
MW #10	09/22/2008	0.519	0.0239	0.013	<0.001	0.38	<0.001	<0.0007	<0.0008	<0.0009	0.522	<0.0012	141	2.06	<0.000042	0.0184	0.0229	<0.0022	<0.0007	0.0059	0.00988
MW #10	04/06/2009		0.025	0.0355			<0.0012	<0.0012				<0.00080	133					<0.0050	<0.0014		
MW #10	09/23/2009		0.0197	0.00999			<0.00200	<0.00500				<0.00500	136		<0.000200			<0.00500	<0.00500		
MW #11A	10/05/2006		0.0582	<0.005			<0.002	0.101				<0.050	443		<0.0002			<0.050	<0.050	<0.005	
MW #11A	12/13/2006		0.0113	0.0336			<0.002	<0.005				<0.005	461		<0.0002			0.00846	<0.005	<0.005	
MW #11A	09/25/2007	<0.0016	0.00734	0.0308	<0.00030	1	<0.00015	<0.00050	<0.00010	<0.00060	12.2	<0.00020	430	1.71	<0.000042	0.00662	<0.00030	0.00631	<0.00020	<0.00040	0.00826
MW #11A	04/01/2008	<0.0016	<0.0018	0.0261	<0.0003	1.15	<0.00015	<0.0005	<0.0001	<0.0003	11.6	<0.0002	391	1.56	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #11A	09/15/2008	<0.0019	0.00914	0.0317	<0.001	0.964	<0.001	<0.0007	<0.0008	<0.0009	10.6	<0.0012	420	1.65	<0.000042	0.00656	<0.0011	0.00527	<0.0007	<0.0014	0.0052
MW #11A	04/02/2009		<0.0018	0.0314			<0.0012	<0.0012				<0.00080	478		<0.000042			<0.0050	<0.0014		
MW #11A	09/22/2009		<0.0100	0.0319			<0.00400	<0.0100				<0.0100	425		<0.000200			<0.0100	<0.0100		
MW #15	10/04/2006		0.013	0.0198			<0.004	0.0124				<0.010	48		<0.0002			<0.010	<0.010	<0.010	
MW #15	12/12/2006		0.0179	0.0258			<0.002	<0.005				<0.005	87.6		<0.0002			<0.005	<0.005	<0.005	
MW #15	09/25/2007	0.0124	0.00744	0.0164	<0.00060	0.217	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	134	0.714	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #15	04/01/2008	0.014	0.02	0.0248	<0.0003	0.411	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	124	1.55	<0.000042	0.00656	0.00969	<0.0017	<0.0002	0.00648	<0.0015
MW #15	09/22/2008	<0.0019	0.0312	0.0175	<0.001	0.4	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	105	1.57	<0.000042	0.00695	0.0102	<0.0022	<0.0007	<0.0014	<0.0017

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	**Date**	**Aluminum**	**Arsenic**	**Barium**	**Beryllium**	**Boron**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Vanadium**	**Zinc**
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #15	04/06/2009		***0.0958***	**0.0321**			<0.0012	<0.0012				<0.00080	**133**					<0.0050	<0.0014		
MW #15	09/23/2009		***0.0185***	**0.0201**			<0.00200	<0.00500				<0.00500	**140**		<0.000200			<0.00500	<0.00500		
MW #16	10/18/2006		***0.0159***	**0.016**			<0.002	**0.00602**				<0.005	**259**		<0.0002			<0.005	<0.005	**0.00964**	
MW #16	12/12/2006		***0.0124***	**0.0169**			<0.002	<0.005				<0.005	**241**		<0.0002			<0.005	<0.005	**0.00697**	
MW #16	09/19/2007	<0.0016	**0.00757**	**0.0225**	<0.00030	**0.363**	<0.00015	<0.00050	**0.00599**	<0.00030	**0.271**	<0.00020	**206**	***2.53***	<0.000042	**0.078**	**0.0162**	<0.0017	<0.00020	<0.00040	<0.0015
MW #16	04/01/2008	<0.0016	**0.00633**	**0.0212**	<0.0003	**0.389**	<0.00015	<0.0005	**0.00654**	<0.0003	**0.541**	<0.0002	**242**	***1.76***	<0.000042	**0.107**	**0.0183**	<0.0017	<0.0002	<0.0004	**0.00642**
MW #16	09/10/2008	**0.0707**	***0.0209***	**0.023**	<0.001	**0.323**	<0.001	<0.0007	**0.0108**	<0.0009	***6.78***	<0.0012	**228**	***3.01***	<0.000042	**0.0894**	**0.0175**	<0.0022	<0.0007	**0.00743**	**0.00628**
MW #16	04/02/2009		<0.0018	**0.0188**			<0.0012	<0.0012				<0.00080	**234**		<0.000042			<0.0050	<0.0014		
MW #16	09/17/2009		**0.00711**	**0.0203**			<0.00200	<0.00500				<0.00500	**212**		<0.000200			<0.00500	<0.00500		
MW #17	04/03/2008	**0.0986**	<0.0018	**0.0148**	<0.0003	**0.164**	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**93.6**	**0.0078**	<0.000042	**0.00588**	<0.0003	**0.0104**	<0.0002	**0.00516**	<0.0015
MW #17	09/23/2008	**0.0254**	<0.0012	**0.0138**	<0.001	**0.142**	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**91.7**	<0.0009	<0.000042	**0.00676**	<0.0011	**0.00861**	<0.0007	**0.00543**	<0.0017
MW #17	04/09/2009		<0.0018	**0.0144**			<0.0012	<0.0012				<0.00080	**97.5**		<0.000042			<0.0050	<0.0014		
MW #17	09/28/2009		<0.00500	**0.0166**			<0.00200	<0.00500				<0.00500	**87.1**		<0.000200			**0.0106**	<0.00500		
MW #18	10/03/2006		***0.0114***	**0.0151**			<0.002	**0.0106**				<0.005	**189**		<0.0002			**0.00704**	<0.005	**0.0205**	
MW #18	12/20/2006	**0.0496**	**0.00699**	**0.0122**	<0.002	**0.439**	<0.002	<0.005	<0.005	<0.005	<0.2	<0.005	**167**	**0.109**	<0.0002	**0.0123**	<0.005	**0.00522**	<0.005	**0.0149**	**0.00597**
MW #18	04/18/2007	**0.107**	**0.00944**	**0.0138**	<0.00030	***2.01***	<0.00015	<0.00050	<0.00010	**0.0355**	<0.025	<0.00020	**1090**	**0.2**	<0.000042	**0.0248**	**0.00566**	**0.00508**	<0.00020	<0.00040	<0.0015
MW #18	04/26/2007	**0.0315**	<0.0018	**0.013**	<0.00030	**0.402**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**137**	**0.0906**	<0.000042	**0.012**	<0.00030	<0.0017	<0.00020	**0.0136**	<0.0015
MW #18	09/28/2007	**0.0152**	<0.0018	**0.015**	<0.00030	**0.712**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**208**	**0.0744**	<0.000042	**0.0145**	<0.00030	**0.00848**	<0.00020	**0.0168**	<0.0015
MW #18	04/08/2008	**0.0533**	<0.0018	**0.0134**	<0.0003	**0.529**	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**182**	**0.0784**	<0.000042	**0.0127**	<0.0003	**0.00595**	<0.0002	**0.0152**	<0.0015
MW #18	09/26/2008	**0.754**	<0.0012	**0.0208**	<0.001	***0.764***	<0.001	<0.0007	<0.0008	<0.0009	**0.415**	<0.0012	**219**	**0.128**	<0.000042	**0.0152**	<0.0011	**0.00803**	<0.0007	**0.0189**	**0.00667**
MW #18	04/13/2009		<0.0018	**0.0135**			<0.0012	<0.0012				<0.00080	**181**		<0.000042			<0.0050	<0.0014		
MW #18	09/24/2009		<0.00500	**0.0118**			<0.00200	<0.00500				<0.00500	**200**		<0.000200			**0.00821**	<0.00500		
MW #18A	10/11/2006		***0.0112***	**0.0193**			<0.002	<0.005				<0.005	**1140**		<0.0002			**0.0085**	<0.005	<0.005	
MW #18A	12/14/2006	**0.0731**	***0.0298***	**0.0176**	<0.004	***2.09***	<0.004	<0.01	<0.01	<0.01	<0.4	<0.010	**1080**	**0.0797**	<0.0002	**0.0197**	<0.01	<0.01	<0.01	<0.01	**0.0125**
MW #18A	09/24/2007	**0.114**	***0.0106***	**0.0162**	<0.00060	***1.85***	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**943**	***0.233***	<0.000042	**0.0264**	**0.0071**	**0.00812**	<0.00040	**0.00659**	**0.0147**
MW #18A	04/01/2008	<0.0016	<0.0018	<0.0006	<0.0003	***1.77***	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**998**	***2.88***	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #18A	09/17/2008	**0.0575**	***0.027***	**0.016**	<0.001	***1.73***	<0.001	<0.0007	<0.0008	**0.00563**	**0.471**	<0.0012	**995**	***1.65***	<0.000042	**0.025**	**0.0102**	**0.00735**	<0.0007	<0.0014	**0.00769**
MW #18A	04/02/2009		<0.0018	**0.0183**			<0.0012	<0.0012				<0.00080	**866**		<0.000042			<0.0050	<0.0014		
MW #18A	09/22/2009		**0.00873**	**0.0172**			<0.00200	<0.00500				<0.00500	**851**		<0.000200			<0.00500	<0.00500		
MW #20	09/29/2006		<0.01	<0.01			<0.002	<0.004				<0.005	**589**		<0.0002			**0.017**	<0.01	**0.0506**	
MW #20	12/18/2006	<0.01	***0.0109***	**0.00936**	<0.002	***1.07***	<0.002	<0.005	**0.00606**	<0.005	<0.2	<0.005	**567**	**0.173**	<0.0002	**0.0202**	**0.00581**	**0.0211**	<0.005	**0.0496**	**0.00901**
MW #20	04/19/2007	<0.0016	**0.00893**	**0.00732**	<0.00030	***0.811***	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**564**	**0.122**	<0.000042	**0.0172**	<0.00030	**0.016**	<0.00020	**0.0383**	<0.0015
MW #20	09/26/2007	<0.0016	**0.00866**	**0.00858**	<0.00030	***0.868***	<0.00015	<0.00050	**0.00502**	<0.00030	<0.025	<0.00020	**420**	***0.209***	<0.000042	**0.0187**	<0.00030	**0.0229**	<0.00020	**0.0486**	**0.00772**
MW #20	04/07/2008	**0.0308**	**0.00814**	**0.00853**	<0.0003	***1.04***	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**544**	**0.149**	<0.000042	**0.018**	<0.0003	**0.0155**	<0.0002	**0.0501**	**0.00629**
MW #20	09/23/2008	**0.0215**	**0.00901**	**0.00922**	<0.001	***0.997***	<0.001	<0.0007	**0.00626**	<0.0009	<0.1	<0.0012	**542**	***0.229***	<0.000042	**0.0176**	**0.00701**	**0.0164**	<0.0007	**0.0501**	<0.0017
MW #20	04/03/2009		<0.0018	<0.0014			<0.0012	<0.0012				<0.00080	**550**		<0.000042			**0.0157**	<0.0014		
MW #20	10/05/2009		**0.00887**	**0.00769**			<0.00200	<0.00500				<0.00500	**427**		<0.000200			**0.013**	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	Date	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #21	10/10/2006		0.00694	0.00956			<0.002	<0.005				<0.005	412		<0.0002			0.0308	<0.005	0.0382	
MW #21	12/18/2006	<0.01	0.00862	0.00896	<0.004	0.679	<0.002	<0.005	<0.005	<0.005	<0.2	<0.005	408	0.44	<0.0002	0.0129	0.00856	0.0359	<0.005	0.0387	0.0114
MW #21	04/20/2007	<0.0016	0.00613	0.00726	<0.00030	0.548	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	362	0.339	<0.000042	0.0137	0.00766	0.0215	<0.00020	0.0324	<0.0015
MW #21	09/26/2007	<0.0016	0.0065	0.0078	<0.00030	0.539	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	333	0.454	<0.000042	0.0154	0.00824	0.0189	<0.00020	0.0377	0.00621
MW #21	04/03/2008	0.0106	0.00571	0.0091	<0.0003	0.673	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	330	0.207	<0.000042	0.014	0.00763	0.0179	<0.0002	0.0392	0.00542
MW #21	09/23/2008	<0.0019	0.00794	0.00953	<0.001	0.625	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	438	0.391	<0.000042	0.015	0.00958	0.024	<0.0007	0.0406	0.00686
MW #21	04/03/2009		<0.0018	<0.0014			<0.0012	<0.0012				<0.00080	430		<0.000042			0.0261	<0.0014		
MW #21	10/05/2009		0.00883	0.00799			<0.00200	<0.00500				<0.00500	378		<0.000200			0.0247	<0.00500		
MW #22A	10/11/2006		0.0696	0.0169			<0.002	<0.005				<0.005	147		<0.0002			<0.005	<0.005	<0.005	
MW #22A	12/14/2006	0.0661	0.0767	0.0167	<0.002	0.559	<0.002	<0.005	<0.005	<0.005	6.04	<0.005	156	4.18	<0.0002	0.0143	0.0173	<0.005	<0.005	<0.005	<0.005
MW #22A	04/19/2007	0.146	0.0591	0.0141	<0.00030	0.456	<0.00015	<0.00050	<0.00010	0.00653	4.24	<0.00020	125	4.99	<0.000042	0.0114	0.0146	<0.0017	<0.00020	<0.00040	<0.0015
MW #22A	09/24/2007	0.0962	0.0567	0.0152	<0.00030	0.516	<0.00015	<0.00050	<0.00010	<0.00030	5.11	<0.00020	139	3.96	<0.000042	0.0137	0.0186	<0.0017	<0.00020	<0.00040	<0.0015
MW #22A	04/07/2008	0.219	0.0618	0.0214	<0.0003	0.567	<0.00015	<0.0005	<0.0001	<0.0003	5.22	<0.0002	150	3.97	<0.000042	0.0132	0.0185	<0.0017	<0.0002	<0.0004	<0.0015
MW #22A	09/22/2008	0.0611	0.0515	0.0157	<0.001	0.567	<0.001	<0.0007	<0.0008	<0.0009	5.24	<0.0012	180	5.18	<0.000042	0.0125	0.022	<0.0022	<0.0007	<0.0014	<0.0017
MW #22A	04/06/2009		0.0561	0.0162			<0.0012	<0.0012				<0.00080	155					<0.0050	<0.0014		
MW #22A	09/23/2009		0.0505	0.0154			<0.00200	<0.00500				<0.00500	167		<0.000200			<0.00500	<0.00500		
MW #23	10/02/2006		0.0311	12.1			<0.002	<0.005				<0.005	122		<0.0002			<0.005	<0.005	<0.005	
MW #23	12/21/2006	0.0442	0.0256	13.6	<0.002	0.728	<0.002	<0.005	<0.005	<0.005	<0.2	<0.005	105	0.0634	<0.0002	<0.005	<0.005	<0.005	<0.005	<0.005	0.0101
MW #23	04/26/2007	0.111	0.026	11.5	<0.00030	0.826	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	0.00976	113	0.0782	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	0.00511
MW #23	09/27/2007	0.0492	0.0284	11.4	<0.00030	0.85	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	124	0.0718	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	0.00584
MW #23	04/08/2008	0.0666	0.0247	12.2	<0.0003	0.927	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	135	0.0856	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	0.0142
MW #23	09/29/2008	0.0901	0.0249	14.4	<0.001	0.995	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	134	0.0764	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	0.0133
MW #23	04/14/2009		0.0212	15.3			<0.0012	<0.0012				<0.00080	132		<0.000042			<0.0050	<0.0014		
MW #23	09/28/2009		0.0182	4.59			<0.00200	<0.00500				<0.00500	141		<0.000200			<0.00500	<0.00500		
MW #25	10/12/2006		<0.005	0.0163			<0.002	<0.005				<0.005	169		<0.0002			<0.005	<0.005	0.0122	
MW #25	12/13/2006		<0.005	0.0129			<0.002	<0.005				<0.005	162		<0.0002			<0.005	<0.005	0.00892	
MW #25	04/18/2007	0.0187	<0.0018	0.0106	<0.00030	0.157	<0.00015	<0.00050	<0.00010	0.00875	<0.025	<0.00020	144	0.174	<0.000042	0.00919	<0.00030	<0.0017	<0.00020	0.00797	<0.0015
MW #25	09/25/2007	0.0123	<0.0018	0.0108	<0.00060	0.142	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	140	0.247	<0.000042	0.00782	<0.00030	0.00538	<0.00020	0.00914	<0.0015
MW #25	04/01/2008	0.0573	<0.0018	0.0133	<0.0003	0.172	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	157	1.11	<0.000042	0.0104	<0.0003	<0.0017	<0.0002	0.0107	<0.0015
MW #25	09/22/2008	<0.0019	<0.0012	0.0102	<0.001	0.145	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	156	0.1	<0.000042	0.009	<0.0011	<0.0022	<0.0007	0.00867	<0.0017
MW #25	04/06/2009		<0.0018	0.0103			<0.0012	<0.0012				<0.00080	139					0.0232	<0.0014		
MW #25	09/23/2009		<0.00500	0.0112			<0.00200	<0.00500				<0.00500	126		<0.000200			<0.00500	<0.00500		
MW #26	10/12/2006		0.00555	0.0192			<0.002	<0.005				<0.005	348		<0.0002			<0.005	<0.005	0.019	
MW #26	12/12/2006		0.00804	0.0138			<0.002	<0.005				<0.005	402		<0.0002			<0.005	<0.005	0.0132	
MW #26	09/19/2007	<0.0016	<0.0018	0.0077	<0.00030	0.209	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	288	0.325	<0.000042	0.0715	0.00596	<0.0017	<0.00020	0.0112	0.006
MW #26	04/01/2008	0.0141	<0.0018	0.00807	<0.0003	0.261	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	474	0.333	<0.000042	0.0852	0.0077	<0.0017	<0.0002	0.0123	0.00804
MW #26	09/10/2008	<0.0019	0.00567	0.00761	<0.001	0.207	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	322	0.278	<0.000042	0.0561	0.00603	0.00743	<0.0007	0.0132	<0.0017
MW #26	04/02/2009		<0.0018	<0.0014			<0.0012	<0.0012				<0.00080	522		<0.000042			<0.0050	<0.0014		
MW #26	09/17/2009		<0.00500	0.00818			<0.00200	<0.00500				<0.00500	328		<0.000200			0.00535	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	Date	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #27	10/12/2006		<0.005	0.0166			<0.002	<0.005				<0.005	112		<0.0002			0.00563	<0.005	0.0123	
MW #27	12/15/2006	0.0224	<0.005	0.0167	<0.002	0.24	<0.002	<0.005	<0.005	<0.005	<0.2	<0.005	96.9	<0.005	<0.0002	0.00979	0.00519	0.00651	<0.005	0.0115	<0.005
MW #27	04/19/2007	0.023	<0.0018	0.0144	<0.00030	0.233	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	96.2	0.00656	<0.000042	0.00897	<0.00030	0.00504	<0.00020	0.0105	<0.0015
MW #27	09/24/2007	0.116	<0.0018	0.0133	<0.00030	0.221	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	103	0.00522	<0.000042	0.00803	<0.00030	0.00826	<0.00020	0.0138	0.00502
MW #27	04/01/2008																				
MW #27	09/23/2008												104								
MW #27	04/03/2009		<0.0018	0.0149			<0.0012	<0.0012				<0.00080	94.2		<0.000042			0.0118	<0.0014		
MW #27	09/17/2009		<0.00500	0.0156			<0.00200	<0.00500				<0.00500	92.2		<0.000200			0.0135	<0.00500		
MW #28	10/03/2006		0.0146	0.0268			<0.002	<0.005				0.0227	193		<0.0002			<0.005	<0.005	<0.005	
MW #28	12/27/2006	0.546	0.00843	0.0354	<0.002	1.27	<0.002	<0.005	<0.005	<0.005	3.31	0.00614	307	0.189	<0.0002	<0.005	0.00892	<0.005	<0.005	<0.005	0.0147
MW #28	04/26/2007	0.0821	<0.0018	0.026	<0.00030	1.32	<0.00015	<0.00050	<0.00010	<0.00030	0.272	0.0178	263	0.0985	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	0.0289
MW #28	04/09/2008	0.0621	0.00652	0.0293	<0.0003	1.22	<0.00015	<0.0005	<0.0001	<0.0003	0.23	0.0148	185	0.124	<0.000042	<0.0017	0.00621	<0.0017	<0.0002	<0.0004	0.0178
MW #28	04/14/2009		<0.0018	0.0321			<0.0012	<0.0012				<0.00080	209		<0.000042			<0.0050	<0.0014		
MW #28	09/25/2009		<0.00500	0.0299			<0.00200	<0.00500				0.00771	184		<0.000200			<0.00500	<0.00500		
MW #29	10/03/2006		0.371	0.0187			<0.002	0.00614				<0.005	455		<0.0002			0.00518	<0.005	0.0455	
MW #29	12/27/2006	0.0189	0.035	0.0187	<0.002	1.34	<0.002	<0.005	<0.005	<0.005	1.11	<0.005	458	0.529	<0.0002	0.0145	0.00954	0.00643	<0.005	0.0292	0.0105
MW #29	04/26/2007	<0.0016	0.027	0.0161	<0.00030	1.23	<0.00015	<0.00050	<0.00010	<0.00030	1.14	<0.00020	396	0.511	<0.000042	0.0133	<0.00030	<0.0017	<0.00020	0.0222	<0.0015
MW #29	09/28/2007	0.0183	0.0208	0.0166	<0.00030	1.02	<0.00015	<0.00050	<0.00010	<0.00030	0.847	<0.00020	268	0.377	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #29	04/09/2008	<0.0016	0.0168	0.0138	<0.0003	1.21	<0.00015	<0.0005	<0.0001	<0.0003	1.08	<0.0002	403	0.446	<0.000042	0.015	<0.0003	0.00772	<0.0002	0.032	<0.0015
MW #29	09/26/2008	1.46	0.0429	0.0291	<0.001	1.11	<0.001	<0.0007	<0.0008	<0.0009	2.69	0.00865	350	0.695	<0.000042	0.0103	0.00509	<0.0022	<0.0007	0.0207	0.0139
MW #29	04/13/2009		0.0274	0.0173			<0.0012	<0.0012				<0.00080	320		<0.000042			<0.0050	<0.0014		
MW #29	09/24/2009		0.0072	0.0222			<0.00200	<0.00500				<0.00500	333		<0.000200			<0.00500	<0.00500		
MW #39	04/08/2008	0.212	0.0166	0.0215	<0.0003	1.76	<0.00015	<0.0005	<0.0001	<0.0003	0.362	<0.0002	104	0.082	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #41	12/27/2006	0.0419	0.0195	0.025	<0.002	1.15	<0.002	<0.005	<0.005	<0.005	0.22	<0.005	300	0.926	<0.0002	<0.005	0.00802	<0.005	<0.005	<0.005	0.00798
MW #41	04/27/2007	0.628	0.016	0.0264	<0.00030	1.1	<0.00015	<0.00050	<0.00010	<0.00030	0.778	<0.00020	263	0.877	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	0.00878
MW #41	10/01/2007	0.57	0.018	0.0281	<0.00030	1.34	<0.00015	<0.00050	<0.00010	<0.00030	0.688	<0.00020	298	1	<0.000042	<0.0017	0.0106	<0.0017	<0.00020	<0.00040	0.0129
MW #41	04/08/2008	0.196	0.0124	0.0213	<0.0003	1.06	<0.00015	<0.0005	<0.0001	<0.0003	0.26	<0.0002	242	0.778	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #41	09/29/2008	0.093	0.0143	0.0228	<0.001	1.33	<0.001	<0.0007	<0.0008	<0.0009	0.226	<0.0012	290	0.944	<0.000042	<0.0009	0.00626	<0.0022	<0.0007	<0.0014	0.00892
MW #41	04/13/2009		0.0181	0.0271			<0.0012	<0.0012				<0.00080	348		<0.000042			<0.0050	<0.0014		
MW #41	09/24/2009		0.0138	0.0179			<0.00200	<0.00500				<0.00500	257		<0.000200			<0.00500	<0.00500		
MW #42	12/21/2006	0.62	0.0167	0.0553	<0.002	0.998	<0.002	<0.005	<0.005	<0.005	0.709	<0.005	320	0.201	<0.0002	<0.005	0.00922	<0.005	<0.005	<0.005	0.00928
MW #42	04/27/2007	1.71	0.0163	0.0621	<0.00030	0.946	<0.00015	<0.00050	<0.00010	<0.00030	2.12	0.00522	281	0.22	<0.000042	<0.0017	0.0102	<0.0017	<0.00020	<0.00040	0.0101
MW #42	10/01/2007	0.872	0.0135	0.0356	<0.00030	1.03	<0.00015	<0.00050	<0.00010	<0.00030	0.997	<0.00020	275	0.226	<0.000042	<0.0017	0.00975	<0.0017	<0.00020	<0.00040	0.00963
MW #42	04/08/2008	1.81	0.0139	0.111	<0.0003	1.1	<0.00015	<0.0005	<0.0001	<0.0003	1.64	<0.0002	322	0.21	<0.000042	<0.0017	0.00844	<0.0017	<0.0002	<0.0004	0.0123
MW #42	09/29/2008	0.322	0.0111	0.0274	<0.001	1.01	<0.001	<0.0007	<0.0008	<0.0009	0.572	<0.0012	281	0.158	<0.000042	<0.0009	0.0078	<0.0022	<0.0007	<0.0014	0.0132
MW #42	04/13/2009		0.015	0.0268			<0.0012	<0.0012				<0.00080	278		<0.000042			<0.0050	<0.0014		
MW #42	09/24/2009		0.0136	0.0224			<0.00200	<0.00500				<0.00500	282		<0.000200			<0.00500	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	**Date**	**Aluminum**	**Arsenic**	**Barium**	**Beryllium**	**Boron**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Vanadium**	**Zinc**
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #43	10/02/2006		***0.0183***	**0.471**			<0.002	<0.005				<0.005	**121**		<0.0002			<0.005	<0.005	<0.005	
MW #43	12/21/2006	**0.272**	***0.0155***	**0.551**	<0.008	**0.342**	<0.002	<0.005	<0.005	<0.005	<0.2	<0.005	**97.8**	***0.399***	<0.0002	<0.005	**0.00638**	<0.005	<0.005	<0.005	**0.00576**
MW #43	04/26/2007	**0.191**	***0.0147***	**0.487**	<0.00030	**0.353**	<0.00015	<0.00050	<0.00010	<0.00030	**0.2**	<0.00020	**102**	***0.392***	<0.000042	<0.0017	**0.00611**	<0.0017	<0.00020	<0.00040	<0.0015
MW #43	09/27/2007	<0.0016	***0.0152***	**0.359**	<0.00030	**0.423**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**143**	***0.353***	<0.000042	<0.0017	**0.00684**	<0.0017	<0.00020	<0.00040	<0.0015
MW #43	04/08/2008	<0.0016	***0.0124***	**0.39**	<0.0003	**0.398**	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**128**	***0.435***	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #43	09/29/2008	<0.0019	***0.0133***	**0.51**	<0.001	**0.469**	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**133**	***0.358***	<0.000042	<0.0009	**0.00719**	<0.0022	<0.0007	<0.0014	<0.0017
MW #43	04/14/2009		***0.0126***	**0.903**			<0.0012	<0.0012				<0.00080	**107**		<0.000042			<0.0050	<0.0014		
MW #43	09/28/2009		***0.0119***	**0.213**			<0.00200	<0.00500				<0.00500	**107**		<0.000200			<0.00500	<0.00500		
MW #45	09/29/2006		**0.00504**	**0.0253**			**0.00102**	**0.00528**				***0.0281***	**226**		<0.0002			<0.005	<0.005	<0.005	
MW #45	04/27/2007	**1.25**	<0.0018	**0.0288**	<0.00030	**0.444**	<0.00015	<0.00050	<0.00010	**0.00582**	***2.45***	***0.0271***	**188**	***0.313***	<0.000042	**0.0149**	**0.0053**	<0.0017	<0.00020	<0.00040	**0.0384**
MW #45	10/01/2007	**1.33**	<0.0018	**0.0301**	<0.00030	**0.482**	<0.00015	**0.0074**	<0.00010	<0.00030	***3.07***	***0.04***	**198**	***0.374***	<0.000042	**0.00953**	**0.00769**	<0.0017	<0.00020	<0.00040	**0.0531**
MW #45	04/09/2008	**0.288**	<0.0018	**0.0163**	<0.0003	**0.569**	<0.00015	<0.0005	<0.0001	<0.0003	**0.971**	**0.00956**	**201**	***0.328***	<0.000042	**0.0184**	**0.0127**	<0.0017	<0.0002	<0.0004	**0.0111**
MW #45	09/25/2008	**0.26**	**0.00539**	**0.016**	<0.001	**0.478**	<0.001	<0.0007	<0.0008	<0.0009	**0.749**	**0.00816**	**184**	***0.296***	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	**0.00867**
MW #45	04/06/2009		<0.0018	**0.0147**			<0.0012	<0.0012				<0.00080	**209**					**0.0112**	<0.0014		
MW #45	09/24/2009		<0.00500	**0.0146**			<0.00200	<0.00500				<0.00500	**257**		<0.000200			<0.00500	<0.00500		
MW #49	12/20/2006	**0.336**	**0.00818**	**0.0432**	<0.002	**0.546**	<0.002	<0.005	<0.005	**0.00791**	**0.342**	<0.005	**159**	***0.329***	<0.0002	<0.005	**0.013**	<0.005	<0.005	<0.005	**0.00848**
MW #49	04/27/2007	**0.0759**	<0.0018	**0.0403**	<0.00030	**0.487**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**176**	***0.285***	<0.000042	<0.0017	**0.0055**	<0.0017	<0.00020	<0.00040	<0.0015
MW #49	09/28/2007	**0.0925**	<0.0018	**0.0446**	<0.00030	**0.601**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**171**	***0.318***	<0.000042	<0.0017	**0.00687**	<0.0017	<0.00020	<0.00040	**0.007**
MW #49	04/08/2008	**0.131**	<0.0018	**0.0471**	<0.0003	**0.649**	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**184**	***0.282***	<0.000042	<0.0017	**0.00748**	<0.0017	<0.0002	<0.0004	<0.0015
MW #49	09/29/2008	**0.0758**	<0.0012	**0.0486**	<0.001	**0.651**	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**170**	***0.302***	<0.000042	<0.0009	**0.00844**	<0.0022	<0.0007	<0.0014	<0.0017
MW #49	04/14/2009		<0.0018	**0.0486**			<0.0012	<0.0012				<0.00080	**180**		<0.000042			<0.0050	<0.0014		
MW #50	10/16/2006		**0.00837**	**0.0228**			<0.002	**0.00916**				<0.005	**193**		<0.0002			<0.005	<0.005	<0.005	
MW #50	12/28/2006	**0.282**	**0.00526**	**0.0274**	<0.002	**0.278**	<0.002	<0.005	<0.005	<0.005	**0.351**	<0.005	**167**	***1.46***	<0.0002	<0.005	**0.00571**	<0.005	<0.005	<0.005	**0.0124**
MW #50	04/25/2007	**0.287**	<0.0018	**0.0218**	<0.00030	**0.27**	<0.00015	<0.00050	<0.00010	<0.00030	**0.334**	<0.00020	**172**	***1.52***	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #50	09/28/2007	**0.127**	<0.0018	**0.0212**	<0.00030	**0.308**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**179**	***1.74***	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #50	04/09/2008	**0.216**	<0.0018	**0.0224**	<0.0003	**0.317**	<0.00015	<0.0005	<0.0001	<0.0003	**0.272**	<0.0002	**162**	***1.61***	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #50	09/29/2008	**0.228**	<0.0012	**0.0217**	<0.001	**0.302**	<0.001	<0.0007	<0.0008	<0.0009	**0.563**	<0.0012	**178**	***1.42***	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #50	04/09/2009		<0.0018	**0.0208**			<0.0012	<0.0012				<0.00080	**164**		<0.000042			<0.0050	<0.0014		
MW #50	09/28/2009		<0.00500	**0.0205**			<0.00200	<0.00500				<0.00500	**162**		<0.000200			<0.00500	<0.00500		
MW #52	10/10/2006		**0.00542**	**0.0128**			<0.002	<0.005				<0.005	**215**		<0.0002			<0.005	<0.005	**0.0236**	
MW #52	12/11/2006		**0.00855**	**0.0148**			<0.002	<0.005				<0.005	**197**		<0.0002			**0.00556**	<0.005	**0.0249**	
MW #52	04/23/2007	**0.183**	<0.0018	**0.0104**	<0.00030	**0.632**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**185**	**0.101**	<0.000042	**0.0127**	**0.00572**	<0.0017	<0.00020	**0.0204**	<0.0015
MW #52	09/17/2007	**0.367**	<0.0018	**0.0112**	<0.00030	**0.631**	<0.00015	<0.00050	<0.00010	<0.00030	**0.213**	<0.00020	**173**	**0.102**	<0.000042	**0.0146**	**0.00862**	<0.0017	<0.00020	**0.0225**	<0.0015
MW #52	04/07/2008	**0.377**	<0.0018	**0.0133**	<0.0003	**0.722**	<0.00015	<0.0005	<0.0001	<0.0003	**0.259**	<0.0002	**187**	**0.1**	<0.000042	**0.0162**	**0.00737**	<0.0017	<0.0002	**0.0233**	**0.0051**
MW #52	09/12/2008	**0.543**	<0.0012	**0.0117**	<0.001	**0.682**	<0.001	<0.0007	<0.0008	<0.0009	**0.321**	<0.0012	**185**	**0.0975**	<0.000042	**0.0167**	**0.00838**	<0.0022	<0.0007	**0.0216**	**0.00502**
MW #52	04/08/2009		<0.0018	**0.0106**			<0.0012	<0.0012				<0.00080	**159**					<0.0050	<0.0014		
MW #52	09/30/2009		**0.00568**	**0.0109**			<0.00200	<0.00500				<0.00500	**149**		<0.000200			<0.00500	<0.00500		
MW #53	04/23/2007	**0.0303**	<0.0018	**0.0221**	<0.00030	**0.272**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**140**	***0.947***	<0.000042	**0.0128**	<0.00030	<0.0017	<0.00020	**0.00924**	<0.0015
MW #53	09/25/2007	**0.0238**	<0.0018	**0.0654**	<0.00030	**0.251**	<0.00015	<0.00050	**0.00725**	<0.00030	<0.025	<0.00020	**142**	***3.16***	<0.000042	**0.0323**	**0.00881**	<0.0017	<0.00020	**0.0131**	**0.0211**
MW #53	04/07/2008	**0.0498**	<0.0018	**0.0228**	<0.0003	**0.323**	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**152**	***1.72***	<0.000042	**0.0211**	**0.00601**	<0.0017	<0.0002	**0.0137**	<0.0015

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	Date	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #53	09/12/2008	0.269	<0.0012	0.0478	<0.001	0.276	<0.001	<0.0007	0.021	<0.0009	0.223	<0.0012	148	3.15	<0.000042	0.0172	0.00863	<0.0022	<0.0007	0.0127	<0.0017
MW #53	04/08/2009		<0.0018	0.0347			<0.0012	<0.0012				<0.00080	167					<0.0050	<0.0014		
MW #53	10/05/2009		<0.00500	0.0293			<0.00200	<0.00500			<0.2	<0.00500	157		<0.000200			<0.00500	<0.00500		
MW #54A	04/23/2007	0.0571	0.00998	0.0179	<0.00030	0.275	<0.00015	<0.00050	<0.00010	<0.00030	0.33	<0.00020	110	0.486	<0.000042	0.00677	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #54A	09/25/2007	0.219	0.00741	0.0191	<0.00030	0.27	<0.00015	<0.00050	<0.00010	<0.00030	0.257	<0.00020	111	0.486	<0.000042	0.00814	0.00578	<0.0017	<0.00020	0.00542	0.00557
MW #54A	04/07/2008	0.104	0.0154	0.018	<0.0003	0.306	<0.00015	<0.0005	<0.0001	<0.0003	0.488	<0.0002	125	0.538	<0.000042	0.007	0.00537	<0.0017	<0.0002	<0.0004	<0.0015
MW #54A	09/12/2008	0.486	<0.0012	0.0257	<0.001	0.315	<0.001	<0.0007	<0.0008	<0.0009	0.314	<0.0012	148	0.541	<0.000042	0.00982	0.00772	<0.0022	<0.0007	0.00559	<0.0017
MW #54A	04/08/2009		<0.0018	0.0167			<0.0012	<0.0012				<0.00080	114					<0.0050	<0.0014		
MW #54A	10/05/2009		0.0152	0.0166			<0.00200	<0.00500			<0.2	<0.00500	126		<0.000200			<0.00500	<0.00500		
MW #55	04/27/2007	0.0844	0.00635	0.0105	<0.00030	0.607	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	274	0.518	<0.000042	0.029	0.00681	0.0127	<0.00020	0.0143	0.00677
MW #55	10/01/2007	0.0582	0.00673	0.0106	<0.00030	0.641	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	286	0.642	<0.000042	0.0275	0.00911	0.0119	<0.00020	0.0147	0.00651
MW #55	04/09/2008	0.0419	0.0057	0.0101	<0.0003	0.647	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	288	0.492	<0.000042	0.0257	0.00769	0.0134	<0.0002	0.0139	0.00501
MW #55	09/26/2008	0.0618	0.0071	0.0118	<0.001	1.05	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	422	0.202	<0.000042	0.0319	0.00766	0.0209	<0.0007	0.0176	0.00719
MW #55	04/10/2009		<0.0018	0.016			<0.0012	<0.0012				<0.00080	308		<0.000042			0.0128	<0.0014		
MW #55	09/24/2009		0.00525	0.00838			<0.00200	<0.00500			<0.2	<0.0100	342		<0.000200			0.0184	<0.0100		
MW #56	09/29/2006		0.00809	0.0158			<0.001	<0.002				<0.005	261		<0.0002			<0.005	<0.005	0.0232	
MW #56	12/27/2006	0.466	0.0115	0.0179	<0.002	0.39	<0.002	<0.005	0.00904	<0.005	0.264	<0.005	222	0.311	<0.0002	0.0104	0.0095	0.00602	<0.005	0.0265	0.00839
MW #56	04/30/2007	0.145	0.00961	0.0139	<0.00030	0.337	<0.00015	<0.00050	0.0118	<0.00030	0.21	<0.00020	230	0.358	<0.000042	0.00992	0.00677	0.0053	<0.00020	0.0187	0.00941
MW #56	10/01/2007	0.208	0.00771	0.015	<0.00030	0.354	<0.00015	<0.00050	0.00831	<0.00030	<0.025	<0.00020	214	0.304	<0.000042	0.0089	0.00753	<0.0017	<0.00020	0.0224	<0.0015
MW #56	04/09/2008	0.178	0.00755	0.015	<0.0003	0.427	<0.00015	<0.0005	0.00771	<0.0003	<0.025	<0.0002	230	0.278	<0.000042	0.00783	0.0136	0.00553	<0.0002	0.0232	<0.0015
MW #56	09/16/2008	0.401	0.0079	0.0184	<0.001	0.399	<0.001	<0.0007	0.00791	<0.0009	0.279	<0.0012	254	0.314	<0.000042	0.00946	0.00721	0.00548	<0.0007	0.0242	<0.0017
MW #56	04/10/2009		<0.0018	0.0142			<0.0012	<0.0012				<0.00080	270		<0.000042			<0.0050	<0.0014		
MW #56	09/24/2009		0.00685	0.0136			<0.00200	<0.00500			<0.2	<0.00500	262		<0.000200			<0.00500	<0.00500		
MW #58	10/17/2006		0.0652	0.433			<0.002	<0.005				<0.005	156		<0.0002			<0.005	<0.005	<0.005	
MW #58	12/11/2006		0.0673	0.37			<0.002	<0.005				<0.005	153		<0.0002			<0.005	<0.005	<0.005	
MW #58	04/24/2007	13	0.0547	0.578	<0.00030	0.28	<0.00015	0.0131	0.0107	0.00549	13.9	0.00947	121	0.772	<0.000042	<0.0017	0.017	<0.0017	<0.00020	0.0359	0.0611
MW #58	09/17/2007	0.0208	0.0545	0.182	<0.00030	0.276	<0.00015	<0.00050	<0.00010	<0.00030	1.46	<0.00020	128	0.777	<0.000042	<0.0017	0.00613	<0.0017	<0.00020	<0.00040	<0.0015
MW #58	04/07/2008	0.0814	0.0588	0.318	<0.0003	0.314	<0.00015	<0.0005	0.00542	<0.0003	2.38	<0.0002	134	0.811	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #58	09/12/2008	0.968	0.0631	0.21	<0.001	0.323	<0.001	<0.0007	0.00743	<0.0009	2.87	<0.0012	154	0.784	<0.000042	<0.0009	0.0114	<0.0022	<0.0007	<0.0014	0.00599
MW #58	04/08/2009		0.0603	0.373			<0.0012	<0.0012				<0.00080	141					<0.0050	<0.0014		
MW #58	09/30/2009		0.0139	0.612			<0.00200	<0.00500				<0.00500	154		<0.000200			<0.00500	<0.00500		
MW #61	12/08/2006		0.00741	0.0772			<0.002	0.00776				0.00772	232		<0.0002			<0.005	<0.005	0.00857	
MW #61	04/24/2007	0.668	<0.0018	0.0499	<0.00030	0.296	<0.00015	<0.00050	<0.00010	<0.00030	0.378	0.00525	215	0.0111	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #61	09/27/2007	0.21	<0.0018	0.0412	<0.00030	0.307	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	0.00534	229	0.00838	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	0.0095
MW #61	04/08/2008	0.609	<0.0018	0.0602	<0.0003	0.324	<0.00015	<0.0005	<0.0001	0.00626	0.393	0.0061	279	0.0187	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	0.0716
MW #61	09/16/2008	1.08	<0.0012	0.0685	<0.001	0.304	<0.001	<0.0007	<0.0008	0.0133	0.844	0.00593	321	0.0236	<0.000042	<0.0009	0.00607	<0.0022	<0.0007	<0.0014	0.149
MW #61	04/09/2009		<0.0018	0.0556			<0.0012	<0.0012				<0.00080	282		<0.000042			<0.0050	<0.0014		
MW #61	10/01/2009		0.00557	0.0439			<0.00200	<0.00500				<0.00500	298		<0.000200			<0.00500	<0.00500		

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Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	**Date**	**Aluminum**	**Arsenic**	**Barium**	**Beryllium**	**Boron**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Vanadium**	**Zinc**
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #62	12/21/2006	**4.61**	***0.0109***	**0.33**	<0.002	**0.424**	<0.002	**0.00671**	<0.005	**0.0104**	***2.91***	<0.005	**99.3**	**0.12**	<0.0002	<0.005	**0.00589**	<0.005	<0.005	**0.0102**	**0.0329**
MW #62	09/27/2007	**1.48**	**0.00819**	**0.132**	<0.00030	**0.521**	<0.00015	<0.00050	<0.00010	**0.019**	***1.24***	<0.00020	**118**	**0.05**	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	**0.0226**
MW #62	04/08/2008	**0.147**	**0.00891**	**0.27**	<0.0003	**0.57**	<0.00015	<0.0005	<0.0001	<0.0003	**0.305**	<0.0002	**113**	**0.0179**	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	**0.00564**
MW #62	09/16/2008	**0.254**	**0.00653**	**0.361**	<0.001	**0.549**	<0.001	<0.0007	<0.0008	**0.00833**	**0.25**	<0.0012	**88**	**0.0118**	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	**0.027**
MW #62	04/14/2009		***0.0192***	**0.445**			<0.0012	<0.0012				<0.00080	**106**		<0.000042			<0.0050	<0.0014		
MW #62	10/01/2009		<0.00500	**0.89**			<0.00200	<0.00500				<0.00500	**80.8**		<0.000200			<0.00500	<0.00500		
MW #63	12/08/2006		***0.0236***	**1**			<0.002	**0.00509**				<0.005	**141**		<0.0002			<0.005	<0.005	<0.005	
MW #63	04/24/2007	**0.49**	***0.0193***	**0.654**	<0.00030	**0.462**	<0.00015	<0.00050	<0.00010	<0.00030	***2.38***	<0.00020	**131**	***0.458***	<0.000042	<0.0017	**0.0102**	<0.0017	<0.00020	<0.00040	<0.0015
MW #63	04/26/2007	**0.371**	**0.00896**	**0.33**	<0.00030	**0.507**	<0.00015	<0.00050	<0.00010	<0.00030	**0.571**	<0.00020	**97.6**	**0.0339**	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #63	09/28/2007	**0.298**	***0.022***	**0.634**	<0.00030	**0.47**	<0.00015	<0.00050	<0.00010	<0.00030	***1.93***	<0.00020	**131**	***0.506***	<0.000042	<0.0017	**0.01**	<0.0017	<0.00020	<0.00040	<0.0015
MW #63	04/08/2008	**0.346**	***0.028***	**0.708**	<0.0003	**0.474**	<0.00015	<0.0005	<0.0001	<0.0003	***2.33***	<0.0002	**148**	***0.486***	<0.000042	<0.0017	**0.00645**	<0.0017	<0.0002	<0.0004	<0.0015
MW #63	09/16/2008	**0.826**	***0.0384***	**0.692**	<0.001	**0.484**	<0.001	<0.0007	<0.0008	<0.0009	***2.41***	<0.0012	**128**	***0.488***	<0.000042	<0.0009	**0.0073**	<0.0022	<0.0007	<0.0014	**0.00615**
MW #66	12/27/2006	**0.548**	**0.00851**	***1.61***	<0.002	**0.266**	<0.002	<0.005	<0.005	<0.005	**0.549**	<0.005	**102**	***0.209***	<0.0002	<0.005	**0.0306**	<0.005	<0.005	<0.005	**0.0124**
MW #66	04/26/2007	**0.615**	**0.00598**	***1.37***	<0.00030	**0.24**	<0.00015	<0.00050	<0.00010	<0.00030	**0.509**	<0.00020	**84.8**	***0.234***	<0.000042	<0.0017	**0.018**	<0.0017	<0.00020	<0.00040	**0.00883**
MW #66	10/01/2007	**1.84**	**0.0066**	***1.66***	<0.00030	**0.248**	<0.00015	<0.00050	<0.00010	<0.00030	***1.38***	**0.0071**	**82.7**	***0.255***	<0.000042	<0.0017	**0.021**	<0.0017	<0.00020	<0.00040	**0.0158**
MW #66	04/09/2008	**0.857**	**0.0054**	***1.4***	<0.0003	**0.281**	<0.00015	<0.0005	<0.0001	<0.0003	**0.688**	<0.0002	**75.8**	***0.26***	<0.000042	<0.0017	**0.0184**	<0.0017	<0.0002	<0.0004	**0.00773**
MW #66	09/25/2008	***9.3***	**0.0088**	***1.53***	<0.001	**0.251**	<0.001	**0.00999**	<0.0008	**0.0178**	***5.57***	***0.0479***	**83**	***0.329***	<0.000042	<0.0009	**0.0231**	<0.0022	<0.0007	**0.0138**	**0.0699**
MW #66	04/14/2009		<0.0018	***1.45***			<0.0012	<0.0012				<0.00080	**86.5**		<0.000042			<0.0050	<0.0014		
MW #66	09/25/2009		<0.00500	***1.61***			<0.00200	<0.00500				<0.00500	**86.4**		<0.000200			<0.00500	<0.00500		
MW #67	12/28/2006	**0.99**	**0.00661**	**0.704**	<0.002	**0.356**	<0.002	<0.005	<0.005	<0.005	***1.22***	<0.005	**144**	***0.26***	<0.0002	<0.005	<0.005	<0.005	<0.005	<0.005	**0.00795**
MW #67	04/25/2007	**0.23**	<0.0018	**0.154**	<0.00030	**0.309**	<0.00015	<0.00050	<0.00010	<0.00030	**0.632**	<0.00020	**136**	***0.271***	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #67	09/28/2007	**0.0278**	<0.0018	**0.109**	<0.00030	**0.379**	<0.00015	<0.00050	<0.00010	<0.00030	**0.465**	<0.00020	**142**	***0.259***	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #67	04/09/2008	**0.0749**	<0.0018	**0.127**	<0.0003	**0.374**	<0.00015	<0.0005	<0.0001	<0.0003	**0.487**	<0.0002	**131**	***0.254***	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #67	09/16/2008	**0.17**	**0.00987**	**0.201**	<0.001	**0.364**	<0.001	<0.0007	<0.0008	**0.00507**	**0.439**	<0.0012	**110**	***0.212***	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	**0.0108**
MW #67	04/14/2009		<0.0018	**0.165**			<0.0012	<0.0012				<0.00080	**108**		<0.000042			<0.0050	<0.0014		
MW #67	10/01/2009		<0.00500	**0.043**			<0.00200	<0.00500				<0.00500	**142**		<0.000200			<0.00500	<0.00500		
MW #68	10/12/2006		<0.005	<0.01			<0.002	<0.005				<0.005	**177**		<0.0002			**0.0095**	<0.005	**0.0152**	
MW #68	12/15/2006	**1.44**	**0.00647**	**0.0239**	<0.002	**0.519**	<0.002	<0.005	<0.005	<0.005	**0.977**	<0.005	**186**	**0.0974**	<0.0002	**0.0106**	**0.0051**	**0.00995**	<0.005	**0.0247**	**0.00922**
MW #68	04/23/2007	**0.441**	<0.0018	**0.00992**	<0.00030	**0.4**	<0.00015	<0.00050	<0.00010	<0.00030	**0.272**	<0.00020	**130**	**0.0101**	<0.000042	**0.0119**	<0.00030	**0.00829**	<0.00020	**0.0142**	<0.0015
MW #68	09/26/2007	**0.0664**	<0.0018	**0.00883**	<0.00030	**0.389**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**117**	<0.0010	<0.000042	**0.0142**	<0.00030	**0.0104**	<0.00020	**0.014**	<0.0015
MW #68	04/03/2008	**2.66**	<0.0018	**0.0299**	<0.0003	**0.486**	<0.00015	<0.0005	<0.0001	<0.0003	***1.44***	<0.0002	**127**	**0.0449**	<0.000042	**0.0139**	<0.0003	**0.00714**	<0.0002	**0.0254**	**0.00807**
MW #68	09/23/2008	**0.0229**	<0.0012	**0.0126**	<0.001	**0.448**	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**165**	<0.0009	<0.000042	**0.0131**	<0.0011	**0.0216**	<0.0007	**0.0138**	<0.0017
MW #68	04/03/2009		<0.0018	**0.0122**			<0.0012	<0.0012				<0.00080	**125**		<0.000042			**0.0163**	<0.0014		
MW #68	09/29/2009		**0.00566**	**0.0156**			<0.00200	<0.00500				<0.00500	**202**		<0.000200			**0.0379**	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	**Date**	**Aluminum**	**Arsenic**	**Barium**	**Beryllium**	**Boron**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Vanadium**	**Zinc**
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #70	10/18/2006		0.28	0.016			<0.002	0.00585				<0.005	194		<0.0002			<0.005	<0.005	<0.005	
MW #70	12/14/2006	<0.01	0.0258	0.017	<0.002	0.206	<0.002	<0.005	<0.005	<0.005	3.38	<0.005	199	0.255	<0.0002	<0.005	<0.005	<0.005	<0.005	<0.005	0.00549
MW #70	04/18/2007	0.052	0.0166	0.0151	<0.00030	0.205	<0.00015	<0.00050	<0.00010	0.00754	2.75	<0.00020	130	0.257	<0.000042	0.00507	<0.00030	<0.0017	<0.00020	<0.00040	0.0121
MW #70	09/24/2007	<0.0016	0.019	0.0142	<0.00030	0.171	<0.00015	<0.00050	<0.00010	<0.00030	2.32	<0.00020	165	0.216	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #70	04/01/2008	0.0883	0.0162	0.0145	<0.0003	0.193	<0.00015	<0.0005	<0.0001	<0.0003	2.37	<0.0002	179	0.242	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #70	09/17/2008	<0.0019	0.0229	0.0136	<0.001	0.24	<0.001	<0.0007	<0.0008	<0.0009	2.63	<0.0012	170	0.211	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #70	04/02/2009		0.0213	0.0148			<0.0012	<0.0012				<0.00080	178		<0.000042			<0.0050	<0.0014		
MW #70	09/22/2009		0.0169	0.0164			<0.00400	<0.0100				<0.0100	153		<0.000200			<0.0100	<0.0100		
MW #72	04/17/2007	1.53	0.196	0.0345	<0.00030	0.44	<0.00015	<0.00050	<0.00010	0.0414	24.4	<0.00020	216	3.63	<0.000042	<0.0017	0.00973	<0.0017	<0.00020	<0.00040	0.0055
MW #72	09/24/2007	0.212	0.191	0.0174	<0.00030	0.451	<0.00015	<0.00050	<0.00010	<0.00030	25.6	<0.00020	229	3.67	<0.000042	<0.0017	0.00787	0.0073	<0.00020	<0.00040	0.00909
MW #72	04/02/2008	0.54	0.157	0.0248	<0.0003	0.513	<0.00015	<0.0005	<0.0001	<0.0003	28.1	<0.0002	241	4.23	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
MW #72	09/11/2008	0.0228	0.153	0.0159	<0.001	0.535	<0.001	<0.0007	<0.0008	<0.0009	28.8	<0.0012	339	5.77	<0.000042	<0.0009	0.0111	0.00724	<0.0007	<0.0014	0.0116
MW #72	03/30/2009		0.0909	0.0147			<0.0012	<0.0012				<0.00080	305		<0.000042			<0.0050	<0.0014		
MW #72	09/18/2009		0.125	0.018			<0.00200	<0.00500				<0.00500	311		<0.000200			<0.00500	<0.00500		
MW #73	04/17/2007	3.52	0.086	0.0568	<0.00030	0.712	<0.00015	<0.00050	<0.00010	0.0271	12.4	<0.00020	223	3.33	<0.000042	0.0136	0.0221	<0.0017	<0.00020	<0.00040	0.0104
MW #73	09/18/2007	0.155	0.0922	0.0116	<0.00030	0.794	<0.00015	<0.00050	<0.00010	<0.00030	9.91	<0.00020	203	2.78	<0.000042	0.0158	0.0218	0.009	<0.00020	<0.00040	<0.0015
MW #73	04/03/2008	1.94	0.1	0.0384	<0.0003	0.958	<0.00015	<0.0005	<0.0001	<0.0003	12.6	<0.0002	220	2.85	<0.000042	0.0148	0.0215	<0.0017	<0.0002	<0.0004	0.0121
MW #73	09/10/2008	0.0331	0.106	0.0104	<0.001	0.956	<0.001	<0.0007	<0.0008	<0.0009	9.88	<0.0012	244	2.85	<0.000042	0.0161	0.0213	0.0105	<0.0007	<0.0014	0.00992
MW #73	03/30/2009		0.107	0.0116			<0.0012	<0.0012				<0.00080	216		<0.000042			<0.0050	<0.0014		
MW #73	09/18/2009		0.112	0.0125			<0.00200	<0.00500				<0.00500	194		<0.000200			<0.00500	<0.00500		
MW #74	04/16/2007	5.31	0.269	0.101	<0.00030	0.55	<0.00015	<0.00050	<0.00010	<0.00030	21.8	<0.00020	192	3.08	<0.000042	0.00831	0.0154	0.0091	<0.00020	<0.00040	0.0106
MW #74	09/18/2007	0.5	0.173	0.0214	<0.00030	0.535	<0.00015	<0.00050	<0.00010	<0.00030	9.88	<0.00020	149	2.51	<0.000042	0.00938	0.0121	0.0156	<0.00020	<0.00040	<0.0015
MW #74	04/03/2008	0.645	0.196	0.0281	<0.0003	0.55	<0.00015	<0.0005	<0.0001	<0.0003	14.5	<0.0002	138	2.3	<0.000042	<0.0017	0.0127	0.00734	<0.0002	<0.0004	0.00667
MW #74	09/11/2008	0.0298	0.203	0.0144	<0.001	0.533	<0.001	<0.0007	<0.0008	<0.0009	9.25	<0.0012	130	2.34	<0.000042	<0.0009	0.0134	0.0109	<0.0007	<0.0014	0.00575
MW #74	03/30/2009		0.127	0.0141			<0.0012	<0.0012				<0.00080	132		<0.000042			<0.0050	<0.0014		
MW #74	09/18/2009		0.102	0.0163			<0.00200	<0.00500				<0.00500	160		<0.000200			0.0187	<0.00500		
MW #75	04/16/2007	0.855	0.357	0.0227	<0.00030	0.522	<0.00015	<0.00050	<0.00010	<0.00030	3.88	<0.00020	102	0.941	<0.000042	<0.0017	0.0224	0.00565	<0.00020	0.0082	<0.0015
MW #75	09/18/2007	0.0108	0.384	0.0143	<0.00030	0.534	<0.00015	<0.00050	<0.00010	<0.00030	2.39	<0.00020	98.2	1.06	<0.000042	<0.0017	0.0218	0.00723	<0.00020	0.00693	<0.0015
MW #75	04/03/2008	0.802	0.436	0.024	<0.0003	0.689	<0.00015	<0.0005	<0.0001	<0.0003	4.34	<0.0002	115	1.13	<0.000042	<0.0017	0.0234	<0.0017	<0.0002	0.0087	0.00586
MW #75	09/11/2008	0.549	0.391	0.0214	<0.001	0.501	<0.001	<0.0007	<0.0008	<0.0009	3.58	<0.0012	99.8	1.06	<0.000042	<0.0009	0.0212	<0.0022	<0.0007	0.00808	<0.0017
MW #75	03/30/2009		0.337	0.0177			<0.0012	<0.0012				<0.00080	82.7		<0.000042			<0.0050	<0.0014		
MW #75	09/18/2009		0.365	0.014			<0.00200	<0.00500				<0.00500	98.4		<0.000200			<0.00500	<0.00500		
MW #76	04/17/2007	0.733	0.0743	0.0328	<0.00030	0.83	<0.00015	<0.00050	<0.00010	<0.00030	3.17	<0.00020	146	0.493	<0.000042	<0.0017	0.0103	0.00796	<0.00020	<0.00040	<0.0015
MW #76	09/18/2007	0.0634	0.0802	0.0133	<0.00030	0.814	<0.00015	<0.00050	<0.00010	<0.00030	2.55	<0.00020	131	0.449	<0.000042	<0.0017	0.00943	0.00696	<0.00020	<0.00040	<0.0015
MW #76	04/03/2008	0.226	0.0644	0.0195	<0.0003	0.756	<0.00015	<0.0005	<0.0001	<0.0003	2.73	<0.0002	163	0.523	<0.000042	<0.0017	0.00955	<0.0017	<0.0002	<0.0004	0.00768
MW #76	09/11/2008	0.0662	0.0584	0.014	<0.001	0.608	<0.001	<0.0007	<0.0008	<0.0009	2.73	<0.0012	149	0.538	<0.000042	<0.0009	0.00922	<0.0022	<0.0007	<0.0014	<0.0017
MW #76	03/31/2009		0.0627	0.0136			<0.0012	<0.0012				<0.00080	155		<0.000042			<0.0050	<0.0014		
MW #76	09/17/2009		0.0723	0.0135			<0.00200	<0.00500				<0.00500	171		<0.000200			<0.00500	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	Date	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #77	04/17/2007	8.26	0.0967	0.168	<0.00030	0.615	<0.00015	0.00851	<0.00010	<0.00030	8.3	<0.00020	220	0.971	<0.000042	<0.0017	0.0168	0.00566	<0.00020	0.0121	0.0139
MW #77	09/18/2007	0.785	0.101	0.0231	<0.00030	0.725	<0.00015	<0.00050	<0.00010	<0.00030	4.25	<0.00020	180	0.792	<0.000042	<0.0017	0.0134	0.00633	<0.00020	0.00525	<0.0015
MW #77	04/03/2008	0.591	0.112	0.0236	<0.0003	0.65	<0.00015	<0.0005	<0.0001	<0.0003	4.13	<0.0002	158	1.02	<0.000042	<0.0017	0.0144	0.00608	<0.0002	<0.0004	<0.0015
MW #77	09/11/2008	1.31	0.107	0.0339	<0.001	0.917	<0.001	0.00582	<0.0008	<0.0009	5.27	<0.0012	296	0.846	<0.000042	<0.0009	0.0193	0.00932	<0.0007	0.00714	0.0058
MW #77	03/31/2009		0.0931	0.0131			<0.0012	<0.0012				<0.00080	189		<0.000042			<0.0050	<0.0014		
MW #77	09/17/2009		0.0856	0.0129			<0.00200	<0.00500				<0.00500	237		<0.000200			0.00574	<0.00500		
MW #78	04/17/2007	0.865	0.0749	0.032	<0.00030	0.529	<0.00015	0.00659	<0.00010	0.0102	4.72	<0.00020	166	0.78	<0.000042	<0.0017	0.0174	0.00569	<0.00020	<0.00040	<0.0015
MW #78	09/18/2007	0.148	0.0551	0.0299	<0.00030	0.52	<0.00015	0.0104	<0.00010	<0.00030	3.93	<0.00020	191	0.431	<0.000042	0.00827	0.0128	0.00543	<0.00020	0.00597	0.00966
MW #78	04/03/2008	0.492	0.0548	0.03	<0.0003	0.576	<0.00015	0.0074	<0.0001	<0.0003	2.56	<0.0002	186	0.769	<0.000042	<0.0017	0.0126	<0.0017	<0.0002	<0.0004	0.00646
MW #78	09/11/2008	0.0739	0.0547	0.0303	<0.001	0.454	<0.001	0.00569	<0.0008	<0.0009	5.36	<0.0012	215	0.572	<0.000042	0.00722	0.0119	<0.0022	<0.0007	<0.0014	0.00597
MW #78	03/31/2009		0.0267	0.0211			<0.0012	0.0242				<0.00080	184		<0.000042			<0.0050	<0.0014		
MW #78	09/17/2009		0.0268	0.0328			<0.00200	0.0421				<0.00500	248		<0.000200			0.00693	<0.00500		
MW #79	04/17/2007	0.731	0.0643	0.021	<0.00030	0.362	<0.00015	<0.00050	<0.00010	0.0107	1.18	<0.00020	68.3	1.52	<0.000042	0.00751	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #79	04/03/2008	1.27	0.0456	0.0311	<0.0003	0.423	<0.00015	<0.0005	<0.0001	<0.0003	3.54	<0.0002	93.1	2.44	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	0.0113
MW #79	09/10/2008	0.0797	0.0404	0.0191	<0.001	0.406	<0.001	<0.0007	<0.0008	<0.0009	1.6	<0.0012	129	3.4	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #79	03/31/2009		0.0207	0.0186			<0.0012	<0.0012				<0.00080	140		<0.000042			<0.0050	<0.0014		
MW #79	09/18/2009		0.0165	0.0182			<0.00200	<0.00500				<0.00500	183		<0.000200			<0.00500	<0.00500		
MW #80	04/17/2007	5.52	0.0653	0.0761	<0.00030	0.391	<0.00015	0.00631	<0.00010	0.0118	9.98	<0.00020	161	2.97	<0.000042	0.00646	0.00729	<0.0017	<0.00020	0.00738	0.0142
MW #80	04/03/2008	0.691	0.044	0.026	<0.0003	0.396	<0.00015	<0.0005	<0.0001	<0.0003	14.6	<0.0002	154	2.11	<0.000042	0.00543	<0.0003	<0.0017	<0.0002	<0.0004	0.00717
MW #80	09/10/2008	0.155	0.0192	0.0161	<0.001	0.425	<0.001	<0.0007	<0.0008	<0.0009	4.28	<0.0012	151	2.12	<0.000042	0.00649	<0.0011	<0.0022	<0.0007	<0.0014	0.00736
MW #80	03/31/2009		0.0111	0.0157			<0.0012	<0.0012				<0.00080	134		<0.000042			<0.0050	<0.0014		
MW #80	09/18/2009		0.0146	0.0173			<0.00200	<0.00500				<0.00500	145		<0.000200			<0.00500	<0.00500		
MW #81	04/17/2007	0.215	0.0279	0.0211	<0.00030	0.387	<0.00015	<0.00050	<0.00010	0.00589	0.885	<0.00020	133	2.82	<0.000042	0.0106	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #81	09/18/2007	0.0865	0.0217	0.0191	<0.00030	0.421	<0.00015	<0.00050	<0.00010	<0.00030	0.202	<0.00020	146	3.56	<0.000042	0.00676	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #81	04/03/2008	0.655	0.024	0.0273	<0.0003	0.46	<0.00015	<0.0005	<0.0001	<0.0003	1.01	<0.0002	166	3.85	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	0.00558
MW #81	09/10/2008	0.101	0.0197	0.0194	<0.001	0.389	<0.001	<0.0007	<0.0008	<0.0009	0.41	<0.0012	185	4.01	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #81	03/31/2009		0.0164	0.0185			<0.0012	<0.0012				<0.00080	149		<0.000042			<0.0050	<0.0014		
MW #81	09/18/2009		0.0114	0.0186			<0.00200	<0.00500				<0.00500	166		<0.000200			<0.00500	<0.00500		
MW #82	04/16/2007	0.469	0.192	0.0278	<0.00030	0.496	<0.00015	<0.00050	<0.00010	<0.00030	4.86	<0.00020	70.6	1.37	<0.000042	<0.0017	0.0273	0.00695	<0.00020	<0.00040	<0.0015
MW #82	09/18/2007	0.0907	0.208	0.024	<0.00030	0.534	<0.00015	<0.00050	<0.00010	<0.00030	1.96	<0.00020	71.7	1.45	<0.000042	<0.0017	0.026	0.00715	<0.00020	<0.00040	<0.0015
MW #82	04/02/2008	1.45	0.199	0.0464	<0.0003	0.596	<0.00015	0.005	<0.0001	<0.0003	3.18	<0.0002	74	1.42	<0.000042	<0.0017	0.0212	0.0052	<0.0002	0.00662	0.0135
MW #82	09/10/2008	0.072	0.196	0.025	<0.001	0.682	<0.001	<0.0007	<0.0008	<0.0009	1.95	<0.0012	82.6	1.48	<0.000042	<0.0009	0.0279	0.0104	<0.0007	<0.0014	<0.0017
MW #82	03/31/2009		0.198	0.0255			<0.0012	<0.0012				<0.00080	79.1		<0.000042			<0.0050	<0.0014		
MW #82	09/21/2009		0.184	0.0214			<0.00200	<0.00500				<0.00500	78.4		<0.000200			0.00534	<0.00500		
MW #83	04/16/2007	3.43	0.128	0.082	<0.00030	0.527	<0.00015	0.00828	<0.00010	0.0091	5.15	<0.00020	125	0.39	<0.000042	<0.0017	0.0205	<0.0017	<0.00020	0.00524	0.00729
MW #83	09/18/2007	0.0847	0.116	0.0137	<0.00030	0.597	<0.00015	<0.00050	<0.00010	<0.00030	3.99	<0.00020	173	0.362	<0.000042	0.0065	0.0185	0.0059	<0.00020	<0.00040	<0.0015
MW #83	04/02/2008	2.67	0.156	0.0864	<0.0003	0.589	<0.00015	0.00976	<0.0001	0.015	6.41	<0.0002	126	0.434	<0.000042	<0.0017	0.0279	<0.0017	<0.0002	0.00648	0.0129
MW #83	09/11/2008	0.0198	0.13	0.015	<0.001	0.576	<0.001	<0.0007	<0.0008	<0.0009	2.69	<0.0012	128	0.303	<0.000042	<0.0009	0.0201	0.00543	<0.0007	<0.0014	0.0241
MW #83	03/31/2009		0.133	0.0159			<0.0012	<0.0012				<0.00080	173		<0.000042			<0.0050	<0.0014		
MW #83	09/21/2009		0.069	0.0185			<0.00200	<0.00500				<0.00500	379		<0.000200			0.00547	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	Date	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #84	04/16/2007	69.5	0.0886	0.411	0.00258	6.33	<0.00015	0.0738	0.0191	0.103	38.6	0.029	772	3.3	<0.000042	0.0612	0.0738	0.00796	<0.00020	0.1	0.111
MW #84	09/18/2007	0.197	0.116	0.0175	<0.00030	4.16	<0.00015	<0.00050	0.00663	<0.00030	1.48	<0.00020	443	2.26	<0.000042	0.0463	0.0541	0.00845	<0.00020	<0.00040	0.00529
MW #84	04/02/2008	2.02	0.113	0.033	<0.0003	3.98	<0.00015	<0.0005	0.00666	0.0116	4.85	<0.0002	432	1.98	<0.000042	0.0517	0.0598	0.00602	<0.0002	0.00673	0.0123
MW #84	09/10/2008	0.326	0.1	0.0182	<0.001	3.45	<0.001	0.00633	0.0072	0.0186	3.21	<0.0012	583	2.79	<0.000042	0.0532	0.0616	0.0103	<0.0007	0.0112	0.0222
MW #84	03/31/2009		0.111	0.0162			<0.0012	<0.0012				<0.00080	461		<0.000042			<0.0050	<0.0014		
MW #84	09/21/2009		0.143	0.0173			<0.00200	<0.00500				<0.00500	512		<0.000200			0.00769	<0.00500		
MW #85	04/16/2007	1.03	0.00639	0.0423	<0.00030	0.418	<0.00015	<0.00050	<0.00010	<0.00030	3.2	<0.00020	94.7	0.738	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
MW #86	04/16/2007	5.42	0.0234	0.0818	<0.00030	0.374	<0.00015	0.00806	<0.00010	0.0129	6.76	<0.00020	135	0.841	<0.000042	<0.0017	0.00508	<0.0017	<0.00020	0.00563	0.0107
MW #87	04/18/2007	29.1	0.0185	0.339	<0.00030	0.34	<0.00015	0.0218	0.014	0.0413	19.4	0.0109	631	2.73	<0.000042	0.00856	0.0249	<0.0017	<0.00020	0.0399	0.0517
MW #88	04/19/2007	5.12	0.0194	0.0661	<0.00030	0.623	<0.00015	0.00603	<0.00010	0.023	3.36	<0.00020	1020	1.17	<0.000042	0.0672	0.0179	<0.0017	<0.00020	0.0255	0.0188
MW #88	09/24/2007	1.11	0.0162	0.0243	<0.00030	0.528	<0.00015	<0.00050	<0.00010	<0.00030	0.817	<0.00020	186	0.416	<0.000042	0.04	0.00997	<0.0017	<0.00020	0.0141	0.0088
MW #88	04/02/2008	1.01	0.0134	0.0234	<0.0003	0.597	<0.00015	<0.0005	<0.0001	<0.0003	0.724	<0.0002	261	0.458	<0.000042	0.0395	0.0083	<0.0017	<0.0002	0.0122	0.00589
MW #88	04/07/2008																				
MW #88	09/22/2008	2.53	0.0142	0.0352	<0.001	0.588	<0.001	<0.0007	<0.0008	<0.0009	1.86	<0.0012	190	0.413	<0.000042	0.0393	0.011	<0.0022	<0.0007	0.0173	0.0105
MW #88	04/06/2009		0.014	<0.0014			<0.0012	<0.0012				<0.00080	176					<0.0050	<0.0014		
MW #88	09/23/2009		0.0123	0.00995			<0.00200	<0.00500				<0.00500	174		<0.000200			<0.00500	<0.00500		
MW #89	04/01/2008	0.58	0.0209	0.0177	<0.0003	0.24	<0.00015	<0.0005	<0.0001	<0.0003	2.55	<0.0002	128	0.951	<0.000042	0.00833	0.00526	<0.0017	<0.0002	<0.0004	<0.0015
MW #89	09/10/2008	13.2	0.0393	0.166	<0.001	0.24	<0.001	0.0142	<0.0008	0.0134	13.9	0.0106	138	1.09	<0.000042	0.00862	0.012	<0.0022	<0.0007	0.0271	0.0334
MW #89	04/02/2009		0.0197	0.0131			<0.0012	<0.0012				<0.00080	146		<0.000042			<0.0050	<0.0014		
MW #89	09/17/2009		0.0101	0.0157			<0.00200	<0.00500				<0.00500	129		<0.000200			<0.00500	<0.00500		
MW #90	05/29/2008	0.116	<0.0012	0.0188	<0.001	0.407	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	219	0.0759	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #90	09/25/2008	0.0326	0.0237	0.0146	<0.001	0.664	<0.001	<0.0007	<0.0008	<0.0009	0.66	<0.0012	388	0.0904	<0.000042	0.0788	<0.0011	0.0296	<0.0007	0.0178	0.0101
MW #90	04/15/2009		<0.0018	0.0218			<0.0012	<0.0012				<0.00080	266		<0.000042			<0.0050	<0.0014		
MW #90	10/01/2009		0.00747	0.0156			<0.00200	<0.00500				<0.00500	276		<0.000200			<0.00500	<0.00500		
MW #91	05/29/2008	0.731	0.00965	0.107	<0.001	0.48	<0.001	<0.0007	<0.0008	<0.0009	1.44	<0.0012	178	0.0919	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	0.00702	<0.0017
MW #91	09/16/2008	1.05	0.0147	0.0926	<0.001	0.471	<0.001	<0.0007	<0.0008	0.0111	1.83	<0.0012	138	0.0708	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	0.0189
MW #91	04/15/2009		<0.0018	0.0934			<0.0012	<0.0012				<0.00080	151		<0.000042			<0.0050	<0.0014		
MW #91	10/01/2009		0.00551	0.04			<0.00200	<0.00500				<0.00500	184		<0.000200			<0.00500	<0.00500		
MW #92	05/29/2008	0.137	0.00531	0.336	<0.001	0.86	<0.001	<0.0007	<0.0008	<0.0009	0.305	<0.0012	167	0.0392	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #92	09/25/2008	0.0391	0.00739	0.519	<0.001	0.964	<0.001	<0.0007	<0.0008	<0.0009	0.211	<0.0012	159	0.031	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #92	04/15/2009		<0.0018	0.313			<0.0012	<0.0012				<0.00080	162		<0.000042			<0.0050	<0.0014		
MW #92	10/01/2009		0.00679	2.07			<0.00200	<0.00500				<0.00500	156		<0.000200			<0.00500	<0.00500		
MW #93	05/29/2008	30.7	0.0139	0.515	0.00234	0.172	<0.001	0.0726	0.00749	0.0431	28	0.0585	113	0.598	<0.000042	0.0104	0.0183	<0.0022	<0.0007	0.0644	0.131
MW #93	09/25/2008	9.3	0.0164	0.206	<0.001	0.193	<0.001	0.0265	<0.0008	0.0211	19.1	0.0288	98.9	0.316	<0.000042	<0.0009	0.00904	<0.0022	<0.0007	0.0464	0.0617
MW #93	04/15/2009		<0.0018	0.123			<0.0012	0.0413				0.0592	97.2		<0.000042			<0.0050	<0.0014		
MW #93	10/01/2009		0.0057	0.044			<0.00200	<0.00500				<0.00500	73.7		<0.000200			<0.00500	<0.00500		
MW #95	05/29/2008	1.32	<0.0012	0.0886	<0.001	0.362	<0.001	<0.0007	<0.0008	<0.0009	1.34	<0.0012	142	0.375	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #95	09/16/2008	0.211	0.0119	0.0546	<0.001	0.34	<0.001	<0.0007	<0.0008	0.00538	0.734	<0.0012	169	0.387	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #95	04/15/2009		<0.0018	0.0756			<0.0012	<0.0012				<0.00080	144		<0.000042			<0.0050	<0.0014		
MW #95	10/01/2009		<0.00500	0.0508			<0.00200	<0.00500				<0.00500	139		<0.000200			<0.00500	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	Date	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
MW #96	05/29/2008	0.909	<0.0012	0.16	<0.001	0.347	<0.001	<0.0007	<0.0008	<0.0009	0.535	<0.0012	137	0.00838	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #96	09/25/2008	1.06	<0.0012	0.216	<0.001	0.299	<0.001	<0.0007	<0.0008	<0.0009	0.686	<0.0012	128	0.0135	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	0.00743
MW #96	04/15/2009		<0.0018	0.146			<0.0012	<0.0012				<0.00080	126		<0.000042			<0.0050	<0.0014		
MW #96	10/01/2009		0.00568	0.102			<0.00200	<0.00500				<0.00500	146		<0.000200			<0.00500	<0.00500		
MW #98	05/30/2008	0.0348	<0.0012	0.0137	<0.001	1.02	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	323	0.148	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #98	09/25/2008	0.218	<0.0012	0.0132	<0.001	0.799	<0.001	<0.0007	<0.0008	<0.0009	0.387	<0.0012	281	0.13	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
MW #98	04/15/2009		<0.0018	0.0104			<0.0012	<0.0012				<0.00080	240		<0.000042			<0.0050	<0.0014		
MW #98	09/28/2009		<0.00500	0.0136			<0.00200	<0.00500				0.00946	347		<0.000200			<0.00500	<0.00500		
MW #99	09/25/2008	0.22	0.0158	0.337	<0.001	0.246	<0.001	<0.0007	<0.0008	<0.0009	0.808	<0.0012	110	0.251	<0.000042	<0.0009	0.123	<0.0022	<0.0007	0.00507	<0.0017
MW #99	04/15/2009		0.0465	0.0811			<0.0012	<0.0012				<0.00080	80		<0.000042			<0.0050	<0.0014		
MW #99	09/28/2009		0.0147	0.103			<0.00200	<0.00500				<0.00500	111		<0.000200			<0.00500	<0.00500		
MW #101	05/30/2008	0.0459	0.036	0.08	<0.001	0.321	<0.001	<0.0007	<0.0008	<0.0009	2.12	<0.0012	102	1.24	<0.000042	<0.0009	0.00793	<0.0022	<0.0007	<0.0014	<0.0017
MW #101	09/16/2008	0.32	0.0569	0.0775	<0.001	0.299	<0.001	<0.0007	<0.0008	<0.0009	3.69	<0.0012	92.7	1.21	<0.000042	<0.0009	0.0107	<0.0022	<0.0007	<0.0014	<0.0017
MW #101	04/15/2009		0.0145	0.194			<0.0012	<0.0012				<0.00080	98.5		<0.000042			<0.0050	<0.0014		
MW #101	09/28/2009		0.0595	0.0651			<0.00200	<0.00500				<0.00500	94.2		<0.000200			<0.00500	<0.00500		
MW #103	09/26/2008											0.0161									
MW #103	03/16/2009	0.0678	<0.0012	0.494	<0.001	0.269	<0.0010	<0.00070	<0.0008	<0.0009	<0.10	<0.0012	7.05	0.0191	<0.000042	<0.0009	<0.0011	<0.0022	<0.00070	<0.0014	0.0079
MW #103	09/28/2009		<0.00500	0.561			<0.00200	<0.00500				<0.00500	6.8		<0.000200			<0.00500	<0.00500		
MW #104	09/26/2008											0.00798									
MW #104	03/16/2009	0.156	<0.0012	0.028	<0.001	0.0804	<0.0010	<0.00070	<0.0008	<0.0009	<0.10	<0.0012	45.1	0.0177	<0.000042	<0.0009	<0.0011	<0.0022	<0.00070	<0.0014	<0.0017
MW #104	09/28/2009		0.00597	0.04			<0.00200	<0.00500				<0.00500	64.6		<0.000200			<0.00500	<0.00500		
MW #106	09/28/2009		0.0112	0.0341			<0.00200	<0.00500				<0.00500	257		<0.000200			<0.00500	<0.00500		
MW #107	09/28/2009		0.00555	1.45			<0.00200	<0.00500				<0.00500	150		<0.000200			<0.00500	<0.00500		
MW #108	10/01/2009		0.0209	0.148			<0.00200	0.0631			18.3	0.0548	212		<0.000200			<0.00500	<0.00500		
NCL #32	04/25/2007	3.25	0.00588	0.0553	<0.00030	0.26	<0.00015	0.0218	<0.00010	0.00951	2.32	0.00805	137	0.85	<0.000042	0.00828	0.00732	<0.0017	<0.00020	0.0132	0.0485
NCL #32	10/01/2007	1.58	0.00586	0.05	<0.00030	0.194	<0.00015	0.013	<0.00010	0.00759	0.903	0.0153	105	0.633	<0.000042	0.00738	0.00826	<0.0017	<0.00020	0.0185	0.0866
NCL #32	04/08/2008	19.6	0.0136	0.207	<0.0003	0.289	<0.00015	0.146	0.0068	0.0649	10.8	0.0554	120	1.03	<0.000042	0.00881	0.018	<0.0017	<0.0002	0.0418	0.185
NCL #32	09/16/2008	8.48	0.0186	0.173	<0.001	0.266	<0.001	0.0257	0.0058	0.0174	3.68	0.0153	115	1.16	0.000202	0.00813	0.0138	<0.0022	<0.0007	0.0166	0.122
NCL #32	04/10/2009		<0.0018	0.143			<0.0012	0.0442				0.0294	119		<0.000042			<0.0050	<0.0014		
NCL #32	09/24/2009		0.0389	1.15			<0.00200	0.383			55.5	0.267	166		0.000223			0.00667	<0.00500		
NCL #33	04/25/2007	0.228	<0.0018	0.0258	<0.00030	0.532	<0.00015	<0.00050	<0.00010	<0.00030	1.48	<0.00020	140	0.112	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
NCL #33	10/01/2007	0.0581	<0.0018	0.0246	<0.00030	0.525	<0.00015	<0.00050	<0.00010	<0.00030	1.42	<0.00020	143	0.125	<0.000042	0.0063	<0.00030	<0.0017	<0.00020	<0.00040	0.0116
NCL #33	04/09/2008	0.0403	<0.0018	0.0231	<0.0003	0.604	<0.00015	<0.0005	<0.0001	<0.0003	1.45	<0.0002	136	0.109	<0.000042	0.0057	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
NCL #33	09/29/2008	0.026	<0.0012	0.0285	<0.001	0.6	<0.001	<0.0007	<0.0008	<0.0009	1.38	<0.0012	167	0.13	<0.000042	0.00605	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
NCL #33	04/10/2009		<0.0018	0.0229			<0.0012	<0.0012				<0.00080	157		<0.000042			<0.0050	<0.0014		
NCL #33	09/24/2009		<0.00500	0.024			<0.00200	<0.00500			3.7	<0.00500	157		<0.000200			<0.00500	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	**Date**	**Aluminum**	**Arsenic**	**Barium**	**Beryllium**	**Boron**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Vanadium**	**Zinc**
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
NCL #34	04/25/2007	**0.149**	<0.0018	**0.495**	<0.00030	**0.26**	<0.00015	<0.00050	<0.00010	<0.00030	**0.225**	<0.00020	**69.3**	**0.0575**	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
NCL #34	10/01/2007	**0.433**	<0.0018	**0.558**	<0.00030	**0.29**	<0.00015	<0.00050	<0.00010	<0.00030	**0.448**	<0.00020	**74.3**	**0.0819**	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
NCL #34	04/09/2008	**0.0692**	<0.0018	**0.605**	<0.0003	**0.306**	<0.00015	<0.0005	<0.0001	<0.0003	**0.212**	<0.0002	**70.4**	**0.0675**	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	**0.00508**
NCL #34	09/16/2008	**0.372**	**0.00846**	**0.368**	<0.001	**0.344**	<0.001	<0.0007	<0.0008	<0.0009	**0.354**	<0.0012	**61.9**	**0.0627**	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	**0.00712**
NCL #34	04/10/2009		<0.0018	**0.608**			<0.0012	<0.0012				<0.00080	**92.5**		<0.000042			<0.0050	<0.0014		
NCL #34	09/24/2009		<0.00500	**0.317**			<0.00200	<0.00500			<0.2	<0.00500	**86.6**		<0.000200			<0.00500	<0.00500		
NCL #44	04/25/2007	**1.18**	***0.081***	**0.0458**	<0.00030	**0.32**	<0.00015	**0.00884**	<0.00010	<0.00030	***3.74***	<0.00020	**112**	***0.769***	<0.000042	**0.0137**	<0.00030	<0.0017	<0.00020	<0.00040	**0.0218**
NCL #44	10/01/2007	**0.0395**	***0.0358***	**0.0246**	<0.00030	**0.256**	<0.00015	<0.00050	<0.00010	<0.00030	***1.12***	<0.00020	**107**	***0.682***	<0.000042	**0.013**	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
NCL #44	04/08/2008	**0.242**	***0.0348***	**0.0291**	<0.0003	**0.33**	<0.00015	<0.0005	<0.0001	<0.0003	***1.38***	<0.0002	**108**	***0.686***	<0.000042	**0.0112**	<0.0003	<0.0017	<0.0002	<0.0004	**0.00667**
NCL #44	09/16/2008	**0.204**	***0.0394***	**0.0266**	<0.001	**0.3**	<0.001	<0.0007	<0.0008	<0.0009	***1.37***	<0.0012	**112**	***0.712***	<0.000042	**0.012**	**0.0074**	<0.0022	<0.0007	<0.0014	**0.00664**
NCL #44	04/10/2009		***0.0436***	**0.0273**			<0.0012	<0.0012				<0.00080	**108**		<0.000042			<0.0050	<0.0014		
NCL #44	09/24/2009		***0.0598***	**0.0276**			<0.00200	<0.00500			***1.52***	<0.00500	**119**		<0.000200			<0.00500	<0.00500		
NCL #49	04/23/2007	**0.0278**	<0.0018	**0.0104**	<0.00030	**0.264**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**175**	<0.0010	<0.000042	<0.0017	<0.00030	**0.00866**	<0.00020	**0.00962**	<0.0015
NCL #49	09/25/2007	<0.0016	<0.0018	**0.0112**	<0.00030	**0.268**	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**193**	**0.00602**	<0.000042	<0.0017	<0.00030	**0.0117**	<0.00020	**0.0103**	<0.0015
NCL #49	04/07/2008	**0.0158**	<0.0018	**0.0143**	<0.0003	**0.361**	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**195**	<0.001	<0.000042	<0.0017	<0.0003	**0.0108**	<0.0002	**0.011**	<0.0015
NCL #49	09/12/2008	**0.0113**	<0.0012	**0.0113**	<0.001	**0.329**	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**208**	<0.0009	<0.000042	<0.0009	<0.0011	**0.00882**	<0.0007	**0.00938**	<0.0017
NCL #49	04/08/2009		<0.0018	**0.0117**			<0.0012	<0.0012				<0.00080	**186**					<0.0050	<0.0014		
NCL #49	10/05/2009		<0.00500	**0.0107**			<0.00200	<0.00500				<0.00500	**198**		<0.000200			**0.00739**	<0.00500		
NP #1	10/10/2006																				
NP #1	12/18/2006																				
NP #1	04/23/2007																				
NP #1	09/26/2007																				
NP #1	04/03/2008																				
NP #1	09/23/2008																				
NP #1	04/08/2009																				
NP #1	09/30/2009																				
NP #2	10/10/2006																				
NP #2	12/18/2006																				
NP #2	04/23/2007																				
NP #2	09/26/2007																				
NP #2	04/03/2008																				
NP #2	09/23/2008																				
NP #2	04/08/2009																				
NP #2	09/30/2009																				

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	Date	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Vanadium	Zinc
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
NP #3	10/12/2006		0.0109	0.0254			<0.002	<0.005				<0.005	204		<0.0002			<0.005	<0.005	0.017	
NP #3	12/11/2006		0.0112	0.0234			<0.002	<0.005				<0.005	206		<0.0002			<0.005	<0.005	0.0118	
NP #3	04/19/2007	0.0943	0.00797	0.018	<0.00030	0.37	<0.00015	<0.00050	0.00957	<0.00030	<0.025	<0.00020	191	0.67	<0.000042	0.0115	0.0112	<0.0017	<0.00020	0.0067	<0.0015
NP #3	09/26/2007	0.0505	0.00845	0.026	<0.00030	0.37	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	179	0.453	<0.000042	0.0139	0.00842	<0.0017	<0.00020	0.0208	0.00695
NP #3	04/07/2008	0.541	0.00579	0.0263	<0.0003	0.399	<0.00015	<0.0005	<0.0001	<0.0003	0.499	<0.0002	276	0.439	<0.000042	0.0113	0.0133	0.00542	<0.0002	0.0162	0.0106
NP #3	09/23/2008	0.31	0.007	0.0196	<0.001	0.357	<0.001	<0.0007	<0.0008	<0.0009	0.385	<0.0012	228	0.292	<0.000042	0.0113	0.00739	0.00536	<0.0007	0.0259	<0.0017
NP #3	04/03/2009		0.01	0.0325			<0.0012	<0.0012				<0.00080	282		<0.000042			<0.0050	<0.0014		
NP #3	10/05/2009		0.00753	0.0143			<0.00200	<0.00500				<0.00500	203		<0.000200			0.0175	<0.00500		
NP #5	10/03/2006		0.00842	0.0123			<0.002	<0.005				<0.01	578		<0.0002			0.095	<0.005	0.0215	
NP #5	12/15/2006	0.489	<0.005	0.0114	<0.002	1.53	<0.002	<0.005	<0.005	<0.005	0.375	<0.005	574	<0.005	<0.0002	0.0347	<0.005	0.072	<0.005	0.02	0.00802
NP #5	04/19/2007	0.928	<0.0018	0.041	<0.0015	3.22	<0.00075	<0.0025	<0.00050	<0.0015	<0.12	<0.00020	561	<0.0050	<0.000042	0.158	<0.0015	0.205	<0.0010	0.0814	<0.0075
NP #5	10/02/2007	0.17	<0.0018	0.00962	<0.00030	1.66	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	585	<0.0010	<0.000042	0.0413	<0.00030	0.118	<0.00020	0.0205	0.013
NP #5	04/07/2008	1.07	<0.0018	0.0223	<0.0003	1.67	<0.00015	<0.0005	<0.0001	<0.0003	0.645	<0.0002	509	0.00506	<0.000042	0.0374	<0.0003	0.0711	<0.0002	0.0218	0.0086
NP #5	09/23/2008	0.174	<0.0012	0.00887	<0.001	1.57	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	595	<0.0009	<0.000042	0.0405	<0.0011	0.0408	<0.0007	0.0183	0.00609
NP #5	04/08/2009		<0.0018	<0.0014			<0.0012	<0.0012				<0.00080	572					0.0435	<0.0014		
NP #5	10/05/2009		<0.00500	0.00617			<0.00200	<0.00500				<0.00500	501		<0.000200			0.0347	<0.00500		
NP #6	10/10/2006		0.00645	0.0128			<0.002	<0.005				<0.005	416		<0.0002			0.0268	<0.005	0.0376	
NP #6	12/18/2006	0.076	0.00777	0.0107	<0.004	0.669	<0.002	<0.005	<0.005	<0.005	<0.2	<0.005	421	0.00734	<0.0002	0.00904	<0.005	0.0306	<0.005	0.0352	0.0126
NP #6	04/23/2007	0.123	0.00614	0.00934	<0.00030	0.519	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	380	<0.0010	0.000232	0.00811	<0.00030	0.024	<0.00020	0.0315	<0.0015
NP #6	09/26/2007	0.118	0.00674	0.0115	<0.00030	0.56	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	386	<0.0010	<0.000042	0.00904	<0.00030	0.0299	<0.00020	0.0349	0.00611
NP #6	04/03/2008	1.91	0.00792	0.0251	<0.0003	0.606	<0.00015	0.00927	<0.0001	<0.0003	0.962	<0.0002	426	0.0214	<0.000042	0.00875	<0.0003	0.0277	<0.0002	0.0358	0.00778
NP #6	09/23/2008	0.0946	0.00508	0.0116	<0.001	0.643	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	417	<0.0009	<0.000042	0.0096	<0.0011	0.0255	<0.0007	0.0337	0.00636
NP #6	04/08/2009		<0.0018	0.0101			<0.0012	<0.0012				<0.00080	393					0.0245	<0.0014		
NP #6	10/05/2009		0.00684	0.00995			<0.00200	<0.00500				<0.00500	360		<0.000200			0.0255	<0.00500		
NP #9	10/03/2006		0.0118	0.0156			<0.002	0.00774				<0.005	366		<0.0002			0.0129	<0.005	0.0266	
NP #9	12/27/2006	0.0978	0.00792	0.018	<0.002	0.692	<0.002	<0.005	<0.005	<0.005	<0.2	<0.005	381	<0.005	<0.0002	0.0198	0.00623	0.0106	<0.005	0.0282	0.0114
NP #9	04/27/2007	0.183	<0.0018	0.0138	<0.00030	0.536	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	354	<0.0010	<0.000042	0.0155	<0.00030	0.0104	<0.00020	0.0224	0.0092
NP #9	04/28/2008	0.0686	<0.0012	0.0159	<0.001	0.409	<0.001	<0.0007	<0.0008	<0.0009	0.228	<0.0012	349	0.0608	<0.000042	0.0126	<0.0011	<0.0022	<0.0007	0.0182	<0.0017
NP #9	09/30/2008	0.176	<0.0012	0.0174	<0.001	0.486	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	357	0.00628	<0.000042	0.01	<0.0011	0.00667	<0.0007	0.0281	0.00823
NP #9	04/10/2009		<0.0018	0.0157			<0.0012	<0.0012				<0.00080	359		<0.000042			<0.0050	<0.0014		
NP #9	09/24/2009		<0.00500	0.0141			<0.00200	<0.00500				<0.00500	356		<0.000200			0.00501	<0.00500		
OCD #1R	09/25/2007	0.184	0.0147	0.02	<0.00060	0.435	<0.00015	<0.00050	<0.00010	<0.00030	5.3	<0.00020	176	2.35	<0.000042	<0.0017	0.00527	<0.0017	<0.00020	<0.00040	<0.0015
OCD #1R	04/01/2008	0.706	0.0124	0.0249	<0.0003	0.419	<0.00015	<0.0005	<0.0001	<0.0003	6.1	<0.0002	210	2.92	<0.000042	<0.0017	<0.0003	0.0102	<0.0002	<0.0004	<0.0015
OCD #1R	09/15/2008	0.0327	0.0161	0.024	<0.001	0.431	<0.001	<0.0007	<0.0008	<0.0009	4.58	<0.0012	282	2.95	<0.000042	0.00543	0.01	0.00613	<0.0007	<0.0014	<0.0017
OCD #1R	04/01/2009		<0.0018	0.0193			<0.0012	<0.0012				<0.00080	172		<0.000042			<0.0050	<0.0014		
OCD #1R	09/21/2009		0.0104	0.0194			<0.00200	<0.00500				<0.00500	191		<0.000200			<0.00500	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	**Date**	**Aluminum**	**Arsenic**	**Barium**	**Beryllium**	**Boron**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Vanadium**	**Zinc**
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
OCD #2A	09/25/2007	**0.0737**	**0.00603**	**0.0252**	<0.00060	**0.318**	<0.00015	<0.00050	<0.00010	<0.00030	***4.52***	<0.00020	**201**	***1.55***	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
OCD #2A	04/01/2008	**0.64**	<0.0018	**0.0295**	<0.0003	**0.399**	<0.00015	<0.0005	<0.0001	<0.0003	***5.53***	<0.0002	**198**	***0.986***	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
OCD #2A	09/15/2008	**0.0226**	**0.00662**	**0.0223**	<0.001	**0.381**	<0.001	<0.0007	<0.0008	<0.0009	***3.35***	<0.0012	**191**	***1.37***	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	**0.0059**
OCD #2A	04/01/2009		<0.0018	**0.0251**			<0.0012	<0.0012				<0.00080	**210**		<0.000042			<0.0050	<0.0014		
OCD #2A	09/22/2009		<0.00500	**0.0266**			<0.00200	<0.00500				<0.00500	**144**		<0.000200			<0.00500	<0.00500		
OCD #3	09/25/2007	**0.0321**	**0.00582**	**0.0199**	<0.00060	**0.368**	<0.00015	<0.00050	<0.00010	<0.00030	***2.4***	<0.00020	**110**	***0.296***	<0.000042	<0.0017	<0.00030	<0.0017	<0.00020	<0.00040	<0.0015
OCD #3	04/01/2008	**0.0155**	<0.0018	**0.0245**	<0.0003	**0.651**	<0.00015	<0.0005	<0.0001	<0.0003	**0.85**	<0.0002	**181**	**0.185**	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
OCD #3	09/15/2008	<0.0019	**0.00705**	**0.0241**	<0.001	**0.728**	<0.001	<0.0007	<0.0008	<0.0009	***1.36***	<0.0012	**142**	**0.116**	<0.000042	**0.00681**	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
OCD #3	04/01/2009		<0.0018	**0.0223**			<0.0012	<0.0012				<0.00080	**108**		<0.000042			<0.0050	<0.0014		
OCD #3	09/22/2009		<0.00500	**0.0214**			<0.00200	<0.00500				<0.00500	**103**		<0.000200			<0.00500	<0.00500		
OCD #4	09/25/2007	**0.0324**	**0.00582**	**0.022**	<0.00030	***0.99***	<0.00015	<0.00050	<0.00010	<0.00030	***4.2***	<0.00020	**263**	***0.22***	<0.000042	**0.0061**	<0.00030	**0.00529**	<0.00020	<0.00040	<0.0015
OCD #4	04/01/2008	**0.11**	<0.0018	<0.0006	<0.0003	***1.19***	<0.00015	<0.0005	<0.0001	<0.0003	***4.32***	<0.0002	**290**	***0.225***	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
OCD #4	09/15/2008	**0.0236**	**0.00811**	**0.0245**	<0.001	***1.05***	<0.001	<0.0007	<0.0008	<0.0009	***3.72***	<0.0012	**284**	***0.23***	<0.000042	**0.00631**	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
OCD #4	04/01/2009		<0.0018	**0.0231**			<0.0012	<0.0012				<0.00080	**281**		<0.000042			<0.0050	<0.0014		
OCD #4	09/22/2009		<0.0100	**0.0222**			<0.00400	<0.0100				<0.0100	**282**		<0.000200			<0.0100	<0.0100		
OCD #5	09/25/2007	**0.0365**	***0.0101***	**0.0232**	<0.00030	***1.08***	<0.00015	<0.00050	<0.00010	<0.00030	***3.64***	<0.00020	**231**	***0.287***	<0.000042	**0.00705**	<0.00030	**0.00502**	<0.00020	<0.00040	<0.0015
OCD #5	04/01/2008	**0.137**	<0.0018	<0.0006	<0.0003	***1.26***	<0.00015	<0.0005	<0.0001	<0.0003	***3.54***	<0.0002	**244**	***0.279***	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
OCD #5	09/15/2008	**0.0166**	***0.0137***	**0.0243**	<0.001	***1.01***	<0.001	<0.0007	<0.0008	<0.0009	***3.22***	<0.0012	**228**	***0.288***	<0.000042	**0.0062**	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
OCD #5	04/01/2009		***0.0115***	**0.0238**			<0.0012	<0.0012				<0.00080	**253**		<0.000042			<0.0050	<0.0014		
OCD #5	09/22/2009		<0.0100	**0.0215**			<0.00400	<0.0100				<0.0100	**249**		<0.000200			<0.0100	<0.0100		
OCD #6	09/19/2007	**0.0221**	***0.0672***	**0.0149**	<0.00030	**0.651**	<0.00015	<0.00050	<0.00010	<0.00030	***14***	<0.00020	**192**	***1.86***	<0.000042	<0.0017	**0.00784**	**0.00643**	<0.00020	<0.00040	<0.0015
OCD #6	04/02/2008	**0.114**	***0.0474***	**0.0139**	<0.0003	**0.627**	<0.00015	<0.0005	<0.0001	<0.0003	***8.7***	<0.0002	**234**	***2.08***	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
OCD #6	09/17/2008	**0.0121**	***0.0501***	**0.0172**	<0.001	**0.69**	<0.001	<0.0007	<0.0008	<0.0009	***9.36***	<0.0012	**217**	***1.91***	<0.000042	**0.00538**	**0.00927**	**0.00827**	<0.0007	<0.0014	**0.00786**
OCD #6	04/01/2009		***0.0456***	**0.0168**			<0.0012	<0.0012				<0.00080	**232**		<0.000042			<0.0050	<0.0014		
OCD #6	09/21/2009		***0.0436***	**0.017**			<0.00200	<0.00500				<0.00500	**217**		<0.000200			<0.00500	<0.00500		
OCD #7A	09/19/2007	**0.199**	***0.317***	**0.0149**	<0.00030	**0.609**	<0.00015	<0.00050	<0.00010	<0.00030	***9.86***	<0.00020	**180**	***3.55***	<0.000042	<0.0017	**0.0105**	**0.00769**	<0.00020	<0.00040	<0.0015
OCD #7A	04/02/2008	**0.249**	***0.293***	**0.0152**	<0.0003	**0.671**	<0.00015	<0.0005	<0.0001	<0.0003	***10***	<0.0002	**200**	***3.53***	<0.000042	<0.0017	**0.0103**	<0.0017	<0.0002	<0.0004	<0.0015
OCD #7A	09/17/2008	**0.846**	***0.334***	**0.022**	<0.001	**0.689**	<0.001	<0.0007	<0.0008	<0.0009	***12.2***	<0.0012	**220**	***3.95***	<0.000042	**0.00556**	**0.0132**	**0.00994**	<0.0007	<0.0014	**0.00738**
OCD #7A	04/01/2009		***0.318***	**0.0162**			<0.0012	<0.0012				<0.00080	**185**		<0.000042			<0.0050	<0.0014		
OCD #7A	09/21/2009		***0.262***	**0.0151**			<0.00200	<0.00500				<0.00500	**208**		<0.000200			<0.00500	<0.00500		
OCD #8A	09/19/2007	**0.149**	***0.106***	**0.0176**	<0.00030	***0.88***	<0.00015	<0.00050	<0.00010	<0.00030	***6.4***	<0.00020	**313**	***3.15***	<0.000042	**0.00814**	**0.0352**	**0.0079**	<0.00020	<0.00040	**0.0057**
OCD #8A	04/01/2008	**1.37**	***0.119***	**0.0293**	<0.0003	***0.816***	<0.00015	<0.0005	<0.0001	<0.0003	***10.3***	<0.0002	**306**	***3.7***	<0.000042	<0.0017	**0.0232**	<0.0017	<0.0002	<0.0004	<0.0015
OCD #8A	09/15/2008	**3.99**	***0.138***	**0.0378**	<0.001	***0.77***	<0.001	<0.0007	**0.00665**	<0.0009	***4.8***	<0.0012	**297**	***3.09***	<0.000042	**0.0275**	**0.0342**	**0.00573**	<0.0007	**0.0123**	**0.0148**
OCD #8A	04/02/2009		***0.105***	**0.014**			<0.0012	<0.0012				<0.00080	**294**		<0.000042			<0.0050	<0.0014		
OCD #8A	09/22/2009		***0.132***	**0.0165**			<0.00200	<0.00500				<0.00500	**296**		<0.000200			<0.00500	<0.00500		

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	**Date**	**Aluminum**	**Arsenic**	**Barium**	**Beryllium**	**Boron**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Vanadium**	**Zinc**
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
RW #1	04/15/2005					**0.35**					***2.23***	<0.005		**0.167**					<0.005		
RW #1	10/03/2006		**0.00709**	**0.0346**			<0.002	**0.00595**				<0.005	**140**		<0.0002			<0.005	<0.005	<0.005	
RW #1	12/28/2006	**0.0103**	***0.0138***	**0.0501**	<0.002	**0.401**	<0.002	<0.005	<0.005	<0.005	***6.62***	<0.005	**176**	**0.192**	<0.0002	**0.005**	**0.0122**	<0.005	<0.005	**0.0062**	**0.0112**
RW #1	04/25/2007	**0.0209**	**0.00742**	**0.0455**	<0.00030	**0.423**	<0.00015	<0.00050	<0.00010	**0.00528**	***1.08***	<0.00020	**146**	**0.112**	<0.000042	<0.0017	**0.0354**	<0.0017	<0.00020	<0.00040	**0.027**
RW #1	04/09/2008	**0.118**	<0.0018	**0.0542**	<0.0003	**0.512**	<0.00015	**0.00692**	<0.0001	**0.00595**	***3.58***	***0.0171***	**154**	**0.0267**	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	**0.0244**
RW #1	09/30/2008	<0.0019	<0.0012	**0.141**	<0.001	**0.505**	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**155**	**0.0197**	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	**0.00573**
RW #1	04/16/2009		<0.0018	**0.0517**			<0.0012	<0.0012				<0.00080	**193**		<0.000042			<0.0050	<0.0014		
RW #1	10/01/2009		<0.00500	**0.0426**			<0.00200	<0.00500				<0.00500	**168**		<0.000200			<0.00500	<0.00500		
RW #18	10/17/2006		***0.0106***	**0.0146**			<0.002	<0.005				<0.005	**611**		<0.0002			**0.00548**	<0.005	**0.0228**	
RW #18	12/11/2006		**0.00916**	**0.0142**			<0.002	<0.005				<0.005	**560**		<0.0002			**0.00704**	<0.005	**0.0234**	
RW #18	04/20/2007	<0.0016	**0.0052**	**0.00943**	<0.00030	***1.45***	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	<0.00020	**589**	**0.0105**	<0.000042	**0.0111**	<0.00030	**0.00532**	<0.00020	**0.0185**	<0.0015
RW #18	09/27/2007	**0.0178**	**0.00553**	**0.0103**	<0.00030	***1.15***	<0.00015	<0.00050	<0.00010	<0.00030	<0.025	**0.00592**	**486**	**0.0269**	<0.000042	**0.0114**	<0.00030	**0.00882**	<0.00020	**0.022**	**0.00791**
RW #18	04/07/2008	**0.533**	<0.0018	**0.0138**	<0.0003	***1.6***	<0.00015	<0.0005	<0.0001	<0.0003	**0.826**	<0.0002	**526**	**0.0201**	<0.000042	**0.0116**	<0.0003	**0.0121**	<0.0002	**0.0248**	**0.0112**
RW #18	09/24/2008	**0.0458**	**0.00541**	**0.011**	<0.001	***1.49***	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**590**	**0.044**	<0.000042	**0.0115**	**0.00515**	**0.00926**	<0.0007	**0.0228**	**0.00521**
RW #18	04/07/2009		<0.0018	**0.0108**			<0.0012	<0.0012				<0.00080	**536**					**0.0115**	<0.0014		
RW #18	09/29/2009		**0.00602**	**0.0109**			<0.00200	<0.00500				<0.00500	**494**		<0.000200			**0.00894**	<0.00500		
TEL #1	04/08/2008	**0.0298**	<0.0018	**0.0131**	<0.0003	**0.557**	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**141**	**0.136**	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
TEL #1	09/25/2008	**0.0296**	**0.00568**	**0.0107**	<0.001	**0.608**	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**175**	***0.204***	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
TEL #1	04/16/2009		<0.0018	**0.0125**			<0.0012	<0.0012				<0.00080	**93.9**		<0.000042			<0.0050	<0.0014		
TEL #1	09/25/2009		**0.00662**	**0.0112**			<0.00200	<0.00500				<0.00500	**123**		<0.000200			<0.00500	<0.00500		
TEL #2	04/08/2008	<0.0016	***0.0156***	**0.135**	<0.0003	**0.605**	<0.00015	<0.0005	<0.0001	<0.0003	<0.025	<0.0002	**151**	**0.0352**	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
TEL #2	09/25/2008	<0.0019	***0.0158***	**0.0768**	<0.001	**0.58**	<0.001	<0.0007	<0.0008	<0.0009	<0.1	<0.0012	**200**	**0.0315**	<0.000042	<0.0009	<0.0011	<0.0022	<0.0007	<0.0014	<0.0017
TEL #2	04/16/2009		***0.0112***	**0.0761**			<0.0012	<0.0012				<0.00080	**196**		<0.000042			<0.0050	<0.0014		
TEL #2	NS																				
TEL #3	04/08/2008	**0.0154**	**0.00528**	**0.0166**	<0.0003	**0.507**	<0.00015	<0.0005	<0.0001	**0.00632**	<0.025	<0.0002	**168**	**0.00741**	<0.000042	<0.0017	<0.0003	<0.0017	<0.0002	<0.0004	<0.0015
TEL #3	04/16/2009		<0.0018	**0.0177**			<0.0012	<0.0012				<0.00080	**149**		<0.000042			<0.0050	<0.0014		
TEL #3	09/25/2009		<0.00500	**0.014**			<0.00200	<0.00500				<0.00500	**151**		<0.000200			<0.00500	<0.00500		
TEL #4	04/26/2007	**0.0705**	***0.0147***	**0.0384**	<0.00030	**0.675**	<0.00015	**0.0129**	<0.00010	<0.00030	**0.591**	<0.00020	**260**	***1.02***	<0.000042	<0.0017	**0.0156**	<0.0017	<0.00020	<0.00040	<0.0015
TEL #4	09/28/2007	**0.0286**	***0.0149***	**0.044**	<0.00030	**0.632**	<0.00015	**0.0104**	<0.00010	<0.00030	**0.504**	<0.00020	**177**	***0.883***	<0.000042	<0.0017	**0.0148**	<0.0017	<0.00020	<0.00040	<0.0015
TEL #4	04/08/2008	**0.0873**	***0.0117***	**0.062**	<0.0003	**0.672**	<0.00015	**0.0253**	<0.0001	<0.0003	**0.659**	<0.0002	**176**	***0.8***	<0.000042	<0.0017	**0.0319**	<0.0017	<0.0002	<0.0004	<0.0015
TEL #4	09/25/2008	**0.0507**	***0.0135***	**0.0352**	<0.001	**0.673**	<0.001	***0.0502***	<0.0008	<0.0009	**0.75**	<0.0012	**150**	***0.869***	<0.000042	<0.0009	**0.0588**	<0.0022	<0.0007	<0.0014	<0.0017
TEL #4	04/16/2009		***0.012***	**0.0409**			<0.0012	***0.0567***				<0.00080	**185**		<0.000042			<0.0050	<0.0014		
TEL #4	09/25/2009		***0.0129***	**0.0349**			<0.00200	**0.0118**				<0.00500	**208**		<0.000200			<0.00500	<0.00500		
RA #313	10/02/2007																				
RA #313	03/31/2008																				
RA #313	09/30/2008												**45.9**								
RA #314	10/02/2007																				
RA #314	03/31/2008																				
RA #314	09/30/2008												**55.6**								

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Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Metals (mg/L)																			
Sample ID	**Date**	**Aluminum**	**Arsenic**	**Barium**	**Beryllium**	**Boron**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Vanadium**	**Zinc**
		WQCC	MCL	WQCC	EPA TW	WQCC	MCL	WQCC	WQCC	WQCC	WQCC	WQCC		WQCC	WQCC	WQCC	WQCC	WQCC	WQCC	NMED TW	WQCC
		5.00E+00	1.00E-02	1.00E+00	7.30E+01	7.50E-01	5.00E-03	5.00E-02	5.00E-02	1.00E+00	1.00E+00	1.50E-02	-	2.00E-01	2.00E-03	1.00E+00	2.00E-01	5.00E-02	5.00E-02	1.83E-01	1.00E+01
RA #3156	09/17/2007																				
RA #3156	03/31/2008																				
RA #3156	09/30/2008												**153**								
RA #3156	04/16/2009												**135**		<0.000042						
RA #3156	09/30/2009		<0.00500	**0.00812**			<0.00200	<0.00500				<0.00500	**138**		<0.000200			**0.00851**	<0.00500		
RA #3353	10/02/2007																				
RA #4196	10/02/2007																				
RA #4196	03/31/2008																				
RA #4196	09/30/2008												**131**								
RA #4196	04/16/2009												**131**		<0.000042						
RA #4196	09/30/2009		<0.00500	**0.0138**			<0.00200	<0.00500				<0.00500	**138**		<0.000200			<0.00500	<0.00500		
RA #4798	10/02/2007																				
RA #4798	03/31/2008																				
RA #4798	03/31/2008																				
RA #4798	09/30/2008												**92.1**								
RA #4798	04/16/2009												**81**		<0.000042						
RA #4798	09/30/2009		<0.00500	**0.0109**			<0.00200	<0.00500				<0.00500	**154**		<0.000200			**0.00815**	<0.00500		
La Rue Well	09/17/2007																				
La Rue Well	03/31/2008																				
La Rue Well	09/30/2008												**151**								
La Rue Well	04/16/2009												**148**		<0.000042						
La Rue Well	09/30/2009		<0.00500	**0.00819**			<0.00200	<0.00500				<0.00500	**156**		<0.000200			**0.00875**	<0.00500		
UG #1	08/06/2008	***7.63***	<0.0012	**0.0585**	<0.001	**0.622**	<0.001	<0.0007	<0.0008	<0.0009	***2.92***	**0.00525**	**236**	**0.0338**	<0.000042	**0.00563**	<0.0011	**0.00777**	<0.0007	**0.0177**	**0.0144**
UG #1	04/09/2009		<0.0018	**0.473**			<0.0012	**0.0315**				***0.0404***	**224**		<0.000042			**0.0126**	<0.0014		
UG #1	10/02/2009												**220**								
UG #2	08/06/2008	***10.8***	**0.00513**	**0.282**	<0.001	**0.606**	<0.001	**0.0098**	**0.00843**	**0.0189**	***7.2***	**0.00836**	**101**	***0.473***	<0.000042	**0.0161**	**0.0224**	<0.0022	<0.0007	**0.0357**	**0.0425**
UG #2	04/09/2009		<0.0018	**0.115**			<0.0012	<0.0012				<0.00080	**97.1**		<0.000042			<0.0050	<0.0014		
UG #2	10/02/2009												**112**								
UG #3R	04/09/2009		<0.0018	**0.0613**			<0.0012	<0.0012				<0.00080	**117**		**0.000309**			<0.0050	<0.0014		
UG #3R	10/02/2009												**148**								

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
KWB #1A	10/17/2006		**190**	**1.14**	<0.50	**1.27**	**217**	***2090***	**3890**	6.77	**386**
KWB #1A	04/20/2007	**431**	**186**	**1.13**	<0.0880	**1.06**	**206**	***2080***	**3920**	6.74	**413**
KWB #1A	09/27/2007	**322**	**172**	<0.100	<0.100	**0.955**	**173**	***1820***	**3420**	6.85	**430**
KWB #1A	04/28/2008	**348**	**250**	**1.04**	<0.01	**1.14**	**166**	***2220***	**3750**	6.81	**476**
KWB #1A	09/24/2008	**423**	**210**	**1.01**	<0.01	**1.06**	**178**	***1830***	**3750**	6.75	**438**
KWB #1A	04/07/2009	**385**	**210**	**0.784**	<0.150	**1.02**	**170**	***1890***	**3610**		**365**
KWB #1A	09/29/2009	**382**	**198**	**0.955**	**0.709**	**0.969**	**168**	***1850***	**3570**	6.92	**409**
KWB #1C	10/17/2006		**191**	**1.03**	<0.50	**1.48**	**236**	***2100***	**3900**	6.78	**381**
KWB #1C	12/11/2006		**191**	**1.02**	**0.534**	**1.44**	**225**	***2120***	**3960**	6.84	**379**
KWB #1C	04/20/2007	**393**	**182**	**0.995**	<0.0880	**1.29**	**192**	***2060***	**3790**	6.76	**387**
KWB #1C	09/27/2007	**356**	**175**	<0.100	<0.100	**1.17**	**197**	***1880***	**3520**	6.75	**398**
KWB #1C	04/07/2008	**356**	**203**	**0.955**	<0.01	**1.33**	**166**	***1850***		6.64	**452**
KWB #1C	09/24/2008	**407**	**203**	**0.881**	<0.01	**1.23**	**171**	***1830***	**3840**	6.78	**413**
KWB #1C	04/07/2009	**403**	**190**	**0.68**	<0.150	**1.33**	**178**	***1850***	**3660**		**346**
KWB #1C	09/29/2009	**350**	**197**	**1.24**	<0.500	**0.866**	**156**	***1820***	**3590**	6.81	**400**
KWB #P2	10/18/2006		***725***	**0.703**	***20.9***	**3.34**	**356**	***2090***	**4680**	6.95	**386**
KWB #P2	12/15/2006	**612**	***713***	**0.609**	***23.1***	**1.08**	**355**	***2040***	**4680**	6.93	**348**
KWB #P2	09/30/2008	**1410**	***769***	**0.422**	<0.01	**16**	**340**	***1940***	**4720**	6.67	**515**
KWB #P2	04/09/2009	**621**	***994***	<0.250	***39.7***	**2.02**	**337**	***1880***	**2040**		**351**
KWB #2R	10/10/2006		***338***	**1.2**	<0.50	**0.278**	**102**	**200**	**1510**	6.58	**741**
KWB #2R	12/11/2006		***413***	**0.762**	<0.50	**0.654**	**318**	**562**	**2210**	6.65	**696**
KWB #3R	10/17/2006		***526***	**0.403**	***34.8***	**0.663**	**407**	***2830***	**5330**	6.72	**299**
KWB #3R	12/18/2006	**788**	***599***	**0.404**	***37.9***	**0.756**	**436**	***2550***	**5510**	6.67	**285**
KWB #3R	04/24/2007	**604**	***369***	**0.359**	***32.5***	**1.12**	**348**	***2630***	**5010**	7.01	**307**
KWB #3AR	09/17/2007	**630**	***452***	**0.296**	***39.4***	**0.805**	**360**	***3130***	**5130**	6.57	**303**
KWB #3AR	04/07/2008	**541**	**206**	**0.213**	<0.01	**1.53**	**334**	***2600***		6.56	**334**
KWB #3AR	09/24/2008	**707**	**243**	**0.28**	<0.01	**0.828**	**419**	***2770***	**5410**	6.75	**367**
KWB #3AR	04/09/2009	**601**	**176**	<0.250	***12.1***	**1.05**	**329**	***2780***	**5270**		**379**
KWB #3AR	09/29/2009	**582**	**176**	<0.500	***11.9***	**0.545**	**411**	***3050***	**5490**	6.8	**335**
KWB #5	10/10/2006		***314***	**0.762**	<0.50	**1.97**	**152**	**4.69**	**1340**	6.69	**798**
KWB #5	12/11/2006		***324***	**0.814**	<0.50	**1.45**	**150**	**2.73**	**1230**	6.68	**790**
KWB #7	10/18/2006		***443***	**0.861**	***9.72***	**0.639**	**258**	***1050***	**3090**	6.82	**747**
KWB #7	12/27/2006	**307**	***422***	**0.875**	***6***	**0.557**	**237**	***955***	**2850**	6.74	**706**
KWB #7	04/23/2007	**309**	***439***	**0.776**	***7.86***	**0.512**	**229**	***903***	**2890**	6.88	**726**
KWB #7	10/02/2007	**332**	***468***	**0.783**	***9.9***	**0.513**	**238**	***918***	**3140**	6.73	**750**
KWB #7	04/07/2008	**256**	***393***	**0.566**	<0.01	**0.49**	**201**	***722***		6.63	**844**
KWB #7	09/24/2008	**422**	***585***	**0.645**	<0.01	**0.633**	**297**	***1120***	**3860**	6.63	**373**
KWB #7	04/07/2009	**313**	***474***	<0.250	***5.74***	**1.25**	**229**	***860***	**2940**		**630**
KWB #7	10/05/2009	**327**	***517***	**0.789**	***7.15***	**0.467**	**256**	***1010***	**3130**	6.67	**686**

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2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
KWB #9	09/29/2006		**194**	**0.301**	<0.50	**0.75**	**156**	***1440***	**2720**		**449**
KWB #9	12/15/2006	**395**	**196**	**0.371**	<0.50	**0.788**	**141**	***1460***	**2750**	6.7	**435**
KWB #9	04/24/2007	**374**	**187**	**0.292**	**0.203**	**0.859**	**142**	***1300***	**2640**	6.82	**419**
KWB #9	09/17/2007	**371**	**185**	**0.323**	<0.100	**0.671**	**133**	***1300***	**2750**	6.49	**381**
KWB #9	04/07/2008	**348**	**189**	**0.259**	<0.01	**0.83**	**130**	***1290***		6.52	**482**
KWB #9	09/24/2008	**396**	**196**	**0.308**	<0.01	**0.824**	**144**	***1340***	**3140**	6.62	**474**
KWB #9	04/08/2009	**433**	**205**	<0.250	**0.564**	**0.812**	**141**	***1370***	**2990**		**482**
KWB #9	09/29/2009	**408**	**242**	<0.500	***1.17***	**0.791**	**137**	***1450***	**3070**	6.71	**424**
KWB #10	10/17/2006		**154**	**1.01**	<0.50	**0.308**	**120**	**11.8**	**995**	6.67	**716**
KWB #10	12/11/2006		**151**	**1.04**	<0.50	**0.28**	**116**	**11.6**	**1060**	6.66	**738**
KWB #10	04/20/2007	**124**	**156**	**1.14**	<0.0880	**0.304**	**104**	**14.5**	**1040**	6.57	**702**
KWB #10	09/27/2007	**119**	**142**	**1.03**	<0.100	**0.251**	**101**	**13.1**	**969**	6.66	**709**
KWB #10	04/07/2008	**132**	**157**	**1.02**	<0.01	**0.363**	**108**	**22.1**		6.54	**830**
KWB #10	09/24/2008	**151**	**161**	**1.03**	<0.01	**0.364**	**117**	**25.3**	**1120**	6.61	**803**
KWB #10	04/07/2009		**166**	**0.764**	**0.778**			**26.8**	**1070**		**644**
KWB #10	09/29/2009										
KWB #11A	10/18/2006		***334***	**0.807**	***3.94***	**0.778**	**211**	**552**	**2000**	6.72	**618**
KWB #11A	12/18/2006	**259**	***380***	**0.79**	***5.15***	**0.511**	**212**	***603***	**2180**	6.62	**580**
KWB #11A	04/23/2007	**222**	***341***	**0.849**	***1.1***	**0.505**	**177**	**550**	**1940**	6.78	**593**
KWB #11A	09/26/2007	**211**	***411***	<0.100	***7.1***	**0.464**	**179**	**578**	**2000**	6.61	**567**
KWB #11A	04/07/2008	**260**	***1060***	**0.615**	<0.01	**0.51**	**202**	***1500***		6.53	**614**
KWB #11A	09/24/2008	**341**	***591***	**0.584**	<0.01	**0.748**	**217**	***647***	**3100**	6.53	**569**
KWB #11A	04/07/2009	**389**	***864***	<0.250	***30.1***	**1.67**	**269**	***814***	**3510**		**466**
KWB #11A	10/05/2009	**366**	***890***	**0.84**	***33.7***	**0.426**	**254**	***954***	**3940**	6.63	**477**
KWB #12A	10/17/2006		**110**	**0.586**	***6.19***	**0.932**	**217**	***2310***	**3890**	6.83	**294**
KWB #12A	12/15/2006	**560**	**108**	**0.372**	***3.91***	**0.729**	**183**	***2410***	**3920**	6.82	**297**
KWB #12A	09/17/2007	**464**	**122**	**0.454**	***6.9***	**0.905**	**172**	***2420***	**4120**	6.79	**264**
KWB #12A	09/30/2008	**576**	**114**	**0.436**	<0.01	**3.32**	**203**	***2260***	**3850**	6.77	**364**
KWB #12A	09/29/2009	**500**	**130**	<0.500	***5.47***	**0.716**	**138**	***2290***	**4010**	6.84	**281**
KWB #13	10/19/2006		**181**	**0.776**	***15.3***	**0.906**	**169**	***1820***	**3380**	6.94	**268**
KWB #13	12/11/2006		**201**	**0.797**	***17.5***	**0.884**	**159**	***1810***	**3490**	6.89	**264**
KWB #13	04/23/2007	**419**	**176**	**0.728**	***14.9***	**2.52**	**131**	***1760***	**3220**	7.02	**322**
KWB #13	09/25/2007	**446**	**186**	<0.100	***15***	**1.14**	**135**	***1640***	**2900**	6.82	**296**
KWB #13	04/09/2008	**419**	**160**	**0.64**	<0.01	**1.22**	**129**	***1760***		6.7	**328**
KWB #13	09/24/2008	**457**	**196**	**0.653**	<0.01	**1.11**	**147**	***1940***	**3590**	6.77	**321**
KWB #13	04/13/2009	**496**	**181**	<0.250	***13***	**1.02**	**154**	***1760***	**3270**		**255**
KWB #13	09/29/2009	**491**	**157**	**0.501**	***14.4***	**0.934**	**147**	***1710***	**3500**	6.91	**286**

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		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #1R	09/25/2007	**605**	***1860***	**0.56**	<0.100	**4.74**	**1030**	***1840***	**5510**	7.2	**244**
MW #1R	04/01/2008	**637**	***1830***	<0.01	<0.01	**4.5**	**991**	***1800***	**6340**	7.14	**241**
MW #1R	09/10/2008	**525**	***2130***	**0.748**	<0.01	**5.8**	**1170**	***2000***		7.26	**291**
MW #1R	04/02/2009	**646**	***1830***	**0.515**	<0.150	**3.62**	**1150**	***1840***	**6240**		**167**
MW #1R	09/23/2009	**538**	***1690***	**0.612**	<1.00	**4.18**	**950**	***1850***	**5960**	7.2	**198**
MW #2A	09/25/2007	**560**	***5410***	***5.86***	<0.100	**6.04**	**3680**	***3740***	***13700***	7.01	**445**
MW #2A	04/02/2008	**614**	***6200***	***5.75***	<0.01	**5.64**	**3850**	***4460***	***15900***	6.96	**490**
MW #2A	09/17/2008	**685**	***7740***	***5.57***	<0.01	**6.97**	**4370**	***5710***	***18000***	6.9	**555**
MW #2A	04/01/2009	**562**	***3750***	***4.74***	**0.712**	**5.34**	**2550**	***2960***	***10400***		**335**
MW #2A	09/21/2009	**394**	***2020***	***5.45***	<1.00	**4.58**	**1180**	***1980***	**6900**	7.06	**207**
MW #3	04/17/2007	**592**	***1050***	***1.9***	<0.0880	**4.11**	**948**	***2180***	**5160**	7.04	**271**
MW #3	10/01/2007	**461**	***1010***	***1.67***	<0.100	**4.33**	**711**	***2050***	**4940**	6.93	**258**
MW #3	04/02/2008	**485**	***1060***	**1.57**	<0.01	**3.99**	**807**	***2090***	**5110**	7	**279**
MW #3	09/17/2008	**533**	***1190***	***2.07***	<0.01	**4.33**	**772**	***2440***	**5220**	6.93	**266**
MW #3	04/01/2009	**517**	***1090***	***1.91***	<0.150	**4.26**	**730**	***2260***	**4960**		**236**
MW #3	09/21/2009	**473**	***976***	***2.11***	<1.00	**4.83**	**699**	***1870***	**4700**	6.95	**236**
MW #4A	04/18/2007	**373**	***1090***	***1.64***	<0.0880	**3.1**	**705**	***1660***	**4380**	7.11	**204**
MW #4A	04/24/2007										
MW #4A	04/27/2007	**441**	***1030***	**1.58**	<0.0880	**3.34**	**726**	***1680***	**4280**	7.4	**210**
MW #4A	09/24/2007	**344**	***1110***	***1.92***	<0.100	**3.91**	**748**	***1390***	**3960**	7.02	**240**
MW #4A	04/02/2008	**354**	***1200***	**1.59**	<0.01	**3.85**	**770**	***1650***	**4640**	7.16	**225**
MW #4A	09/22/2008	**375**	***1210***	***1.79***	<0.01	**4.62**	**841**	***1410***	**4520**	7.01	**223**
MW #4A	04/06/2009	**352**	***1180***	**1.55**	<0.150	**5.33**	**725**	***1540***	**4540**		**216**
MW #4A	09/23/2009	**380**	***1280***	***1.65***	<1.00	**3.74**	**833**	***1570***	**4710**	7.07	**222**
MW #5A	04/18/2007	**541**	***4480***	***2.15***	<0.0880	**4.89**	**3890**	***7230***	***16700***	6.92	**429**
MW #5A	09/24/2007	**418**	***4080***	***3.31***	<0.100	**6.1**	**3110**	***6740***	***15600***	7.17	**475**
MW #5A	04/01/2008	**1040**	***3630***	***2.34***	<0.01	**16.2**	**4150**	***5760***	***16300***	6.9	**784**
MW #5A	09/15/2008	**524**	***4730***	***2.5***	<0.01	**14.9**	**3090**	***7440***	***16000***	6.86	**467**
MW #5A	09/22/2009	**468**	***3360***	***2.71***	<1.00	**7.98**	**2800**	***5160***	***13200***	6.86	**414**
MW #6A	09/24/2007	**289**	***850***	**1.48**	<0.100	**1.33**	**753**	***1670***	**3870**	7.39	**172**
MW #6A	04/02/2008	**247**	***863***	**1.36**	<0.01	**1.17**	**761**	***1550***	**3770**	7.54	**169**
MW #6A	09/15/2008	**225**	***883***	**1.6**	<0.01	**1.37**	**663**	***1680***	**3850**	7.48	**149**
MW #6A	04/01/2009	**294**	***864***	**1.35**	<0.150	**1.32**	**733**	***1510***	**3720**		**148**
MW #6A	09/21/2009	**259**	***876***	**1.32**	<1.00	**1.18**	**679**	***1410***	**3680**	7.46	**130**

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #7A	04/18/2007	388	2080	0.915	<0.0880	4.01	1500	2650	7360	7.09	276
MW #7A	04/23/2007										
MW #7A	04/27/2007	380	1990	0.953	<0.0880	4.05	1400	2550	6940	7.35	250
MW #7A	09/24/2007	389	2100	<0.100	<0.100	4.23	1590	2610	7060	7.22	286
MW #7A	04/01/2008	377	1970	1.02	<0.01	4.03	1600	2420	7890	7.08	267
MW #7A	09/17/2008	398	2440	1.17	<0.01	5.11	1540	2980	7390	7.03	297
MW #7A	04/02/2009	434	1980	0.972	<0.150	4.02	1820	2450	6880		455
MW #7A	09/22/2009	360	1960	1.1	<1.00	3.9	1550	2430	7580	7.12	246
MW #8	10/10/2006		316	2.49	1.34	1.71	378	2140	4030	7.08	276
MW #8	12/18/2006	338	301	2.21	<0.50	1.76	371	2000	3860	7.06	285
MW #8	04/20/2007	309	248	2.07	<0.0880	1.39	313	1830	3470	7.24	279
MW #8	09/26/2007	280	265	1.2	<0.10	1.28	280	1590	3270	7.11	255
MW #8	04/03/2008	322	260	2.21	<0.01	1.48	299	1910	3580	7.11	279
MW #8	09/23/2008	392	283	1.92	<0.01	1.64	328	2070	4150	7.05	290
MW #8	04/03/2009	359	344	1.89	3.21	1.53	275	2570	4380		296
MW #8	10/05/2009	482	425	2.02	12.2	1.75	391	2690	5350	6.96	293
MW #9	04/03/2008	365	367	1.43	<0.01	2.2	360	2610	5110	6.95	328
MW #9	09/23/2008	580	361	2.14	<0.01	2.5	512	2750	5520	6.92	311
MW #9	04/03/2009	564	476	2.08	16.6	2.21	500	3200	5570		335
MW #9	10/05/2009	463	508	2.11	18.3	2.14	408	2860	5850	6.88	283
MW #10	10/18/2006		1330	0.833	<0.50	3.84	1040	1970	5200	6.98	227
MW #10	12/14/2006	465	1350	0.718	<0.50	3.33	917	2020	5260	7.27	240
MW #10	04/19/2007	574	1360	0.714	<0.0880	3.13	1110	1920	5400	6.93	237
MW #10	09/24/2007	509	1360	0.799	<0.100	3.47	937	1890	4900	7.06	248
MW #10	04/02/2008	434	1440	<0.01	<0.01	3.65	908	1930	5400	6.92	255
MW #10	09/22/2008	546	1370	0.702	<0.01	3.48	1010	1900	5610	6.87	256
MW #10	04/06/2009		1370	0.519	<0.150	5.69	928	1880	5260		216
MW #10	09/23/2009	497	1680	0.596	<1.00	3.29	945	1900	5530	6.96	236
MW #11A	10/05/2006		8420	1.16	<0.50	23.7	4510	2810	18400	6.93	375
MW #11A	12/13/2006		8730	0.809	<0.50	25.2	5000	2900	19600	6.97	401
MW #11A	09/25/2007	1110	8570	<0.100	<0.100	22.8	4500	2810	18400	6.98	449
MW #11A	04/01/2008	967	9040	<0.01	<0.01	20.2	4120	3020	20300	6.79	431
MW #11A	09/15/2008	1030	9020	<0.01	<0.01	22	4410	3110	20700	6.75	392
MW #11A	04/02/2009	1160	9040	0.503	<0.150	21.2	4930	2820	18000		416
MW #11A	09/22/2009	1010	9290	0.698	<1.00	21.9	4370	2850	19100	6.84	366
MW #15	10/04/2006		466	1.26	<0.50	4.13	424	928	2040	7.45	125
MW #15	12/12/2006		1120	1.11	<0.50	5.07	633	1240	3700	7.29	132
MW #15	09/25/2007	534	1450	0.493	<0.100	5.8	730	1520	4260	7.25	117
MW #15	04/01/2008	587	1370	1.84	<0.01	6.19	773	2170	5710	7	184
MW #15	09/22/2008	511	1100	2.93	<0.01	6.12	794	1870	4920	6.96	182

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2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #15	04/06/2009	621	1280	3.43	<0.150	7.25	806	2070	5290		167
MW #15	09/23/2009	620	1500	1.22	<1.00	5.85	775	1970	5830	7.16	111
MW #16	10/18/2006		665	2.31	<0.50	11.2	469	2300	4680	7.03	273
MW #16	12/12/2006		639	2.31	<0.50	10.7	431	2260	4750	7.09	285
MW #16	09/19/2007	502	609	2.21	<0.100	9.53	377	2390	4810	7.02	284
MW #16	04/01/2008	526	627	2.11	<0.01	9.76	449	2390	5140	6.96	295
MW #16	09/10/2008	471	526	2.08	<0.01	9.83	426	2240		7.07	290
MW #16	04/02/2009	528	502	2.12	0.577	8.1	434	2280	4740		249
MW #16	09/17/2009	514	495	2.01	<1.00	8.58	391	2350	4510	7.03	262
MW #17	04/03/2008	328	163	0.861	<0.01	2.11	87.1	1150	2260	7.25	120
MW #17	09/23/2008	388	152	0.791	<0.01	2.06	82.7	1140	2360	7.15	124
MW #17	04/09/2009	370	166	0.655	2.04	2.18	85.1	1200	2270		115
MW #17	09/28/2009	355	118	0.742	2.07	2.18	56	1030	1910	7.42	101
MW #18	10/03/2006		192	0.872	10	1.33	78.5	1210	2600	6.74	399
MW #18	12/20/2006	319	187	0.934	6.66	1.03	72.5	1100	2430	6.72	392
MW #18	04/18/2007	659	7700	2.96	<0.0880	36.3	4450	6090	5510	7.07	296
MW #18	04/26/2007	305	184	0.936	7.57	0.838	59.9	1110	2440	7.04	420
MW #18	09/28/2007	389	169	0.878	16.3	1.52	76.8	1290	2880	6.9	379
MW #18	04/08/2008	318	163	0.899	<0.01	1.08	71.1	1220		6.61	443
MW #18	09/26/2008	402	168	1.06	<0.01	2.19	79.7	1410	3240	6.71	365
MW #18	04/13/2009	344	177	0.721	13.7	1.45	76.9	1240	2690		399
MW #18	09/24/2009	359	173	0.713	11.2	1.29	90.3	1160	2680	6.65	430
MW #18A	10/11/2006		8670	3.48	1.64	52.3	4570	6370	22500	7.19	313
MW #18A	12/14/2006	617	8700	2.93	0.992	50.5	4620	6580	22900	7.17	313
MW #18A	09/24/2007	632	6940	3.46	<0.100	40.2	3820	5580	18000	7.18	339
MW #18A	04/01/2008	678	5490	1.72	<0.01	36.7	4040	4530	19100	6.93	350
MW #18A	09/17/2008	709	7950	2.85	<0.01	39.3	4160	6370	18800	7.08	340
MW #18A	04/02/2009	649	5410	2.41	<0.150	31.3	3530	5000	15600		372
MW #18A	09/22/2009	616	6130	2.32	<1.00	38	3590	5180	16400	7.06	308
MW #20	09/29/2006		534	2.65	2.55	0.535	335	3250	6010		263
MW #20	12/18/2006	444	535	2.64	2.26	0.677	333	3130	6010	7.03	274
MW #20	04/19/2007	478	543	2.62	2.01	0.526	305	3240	6000	6.92	274
MW #20	09/26/2007	341	497	2.33	2.4	0.534	222	3030	5740	6.87	284
MW #20	04/07/2008	441	431	2.45	<0.01	0.611	282	3080		6.82	312
MW #20	09/23/2008	495	398	2.14	<0.01	0.685	290	3150	5880	6.9	295
MW #20	04/03/2009	494	353	2.32	2.12	0.632	290	3120	5480		277
MW #20	10/05/2009	399	301	2.46	1.5	0.415	229	3000	5710	6.88	273

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2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #21	10/10/2006		456	2.16	6.57	2.09	439	3270	5780	6.99	308
MW #21	12/18/2006	507	447	1.95	4.86	2.18	446	3090	5800	6.65	253
MW #21	04/20/2007	473	429	1.75	3.47	1.91	405	2820	5140	7.05	289
MW #21	09/26/2007	407	371	1.05	3.5	1.74	373	2750	5040	6.97	310
MW #21	04/03/2008	391	393	1.28	<0.01	1.82	380	2880	5250	7.03	314
MW #21	09/23/2008	559	391	1.74	<0.01	2	489	2980	5690	6.93	328
MW #21	04/03/2009	556	482	1.71	15.6	1.92	479	3150	5800		301
MW #21	10/05/2009	479	475	1.62	16.8	1.75	411	2930	5950	6.99	293
MW #22A	10/11/2006		1670	0.946	<0.50	3.5	1180	1950	5730	7.1	203
MW #22A	12/14/2006	480	1730	0.634	<0.50	3.48	1200	2010	5840	7.04	177
MW #22A	04/19/2007	558	1740	0.602	<0.0880	2.71	1330	1960	5890	6.87	201
MW #22A	09/24/2007	408	1670	<0.100	<0.100	3.13	1030	1880	5940	7.08	211
MW #22A	04/07/2008	445	1740	0.673	<0.01	3.52	1060	1940		6.81	226
MW #22A	09/22/2008	554	1800	0.586	<0.01	3.25	1280	2010	6300	6.82	229
MW #22A	04/06/2009	565	1750	0.561	<0.150	3.64	1320	1920	5780		196
MW #22A	09/23/2009	480	1810	0.517	<1.00	3.13	1140	2040	6430	6.93	217
MW #23	10/02/2006		501	0.748	<0.50	1.5	372	5.93	1980	6.59	1040
MW #23	12/21/2006	92.1	489	0.429	<0.50	1.21	408	6.27	1900	6.73	867
MW #23	04/26/2007	101	499	0.697	<0.0880	1.21	355	4.45	2040	6.92	1020
MW #23	09/27/2007	112	483	0.713	<0.100	1.41	368	5.95	1940	6.81	1040
MW #23	04/08/2008	116	448	0.59	<0.01	1.45	401	28.7		6.53	962
MW #23	09/29/2008	123	488	0.42	<0.01	1.53	407	6.24	2020	6.63	991
MW #23	04/14/2009	112	467	0.592	<0.150	1.3	433	15.9	2040		1140
MW #23	09/28/2009	73.1	555	1.06	<0.500	1.24	454	29.7	2270	7.21	1010
MW #25	10/12/2006		1120	0.954	<0.50	3.95	732	1420	4030	7.22	183
MW #25	12/13/2006		1080	1.14	<0.50	3.87	738	1410	4070	7.29	179
MW #25	04/18/2007	282	1010	1.2	<0.0880	3.35	654	1370	3860	7.24	181
MW #25	09/25/2007	260	945	0.986	<0.100	3.43	615	1280	3330	7.39	195
MW #25	04/01/2008	270	1050	1.16	<0.01	3.7	642	1360	3920	7.19	191
MW #25	09/22/2008	292	891	1.08	<0.01	3.48	614	1270	3770	7.17	183
MW #25	04/06/2009	294	882	0.878	0.525	5.2	581	1240	3570		157
MW #25	09/23/2009	279	825	1.1	<1.00	3.46	535	1230	3560	7.3	159
MW #26	10/12/2006		452	2.11	<0.50	4.81	322	2570	4810	7.08	183
MW #26	12/12/2006		568	2.11	1.5	4.66	372	2910	5650	7.14	169
MW #26	09/19/2007	579	428	1.5	<0.100	3.62	267	2510	4420	7.09	167
MW #26	04/01/2008	522	714	1.81	<0.01	4.48	422	3270	6660	7.17	201
MW #26	09/10/2008	452	468	1.48	<0.01	4.08	338	2390		7.1	189
MW #26	04/02/2009	566	734	1.74	<0.150	4.38	502	3540	6720		177
MW #26	09/17/2009	445	590	1.92	<1.00	3.9	313	2860	5310	7.01	179

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Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #27	10/12/2006		**235**	**1.04**	**0.871**	**10.7**	**166**	***1530***	**2950**	6.88	**198**
MW #27	12/15/2006	**495**	**230**	**1.16**	**0.865**	**9.65**	**178**	***1540***	**2890**	6.98	**198**
MW #27	04/19/2007	**480**	**206**	**1.23**	**0.675**	**9.28**	**150**	***1490***	**2790**	6.94	**212**
MW #27	09/24/2007	**400**	**207**	**1.15**	<0.100	**8.59**	**157**	***1420***	**2660**	7.19	**220**
MW #27	04/01/2008		***271***	**1.12**	<0.01			***1400***	**2840**	6.97	**210**
MW #27	09/23/2008	**463**	**218**	**1.12**	<0.01	**9.56**	**155**	***1410***	**2880**	6.99	**214**
MW #27	04/03/2009	**441**	**212**	**0.979**	***1.65***	**9.23**	**142**	***1430***	**2720**		**201**
MW #27	09/17/2009	**379**	**201**	**1.18**	***2.6***	**9.54**	**135**	***1350***	**2710**	6.94	**199**
MW #28	10/03/2006		**189**	**0.845**	<0.50	**0.682**	**86.3**	***934***	**2480**	6.45	**687**
MW #28	12/27/2006	**451**	**159**	**1.28**	<0.50	**0.648**	**94.4**	***1350***	**3300**	6.56	**717**
MW #28	04/26/2007	**375**	**164**	**1.27**	<0.0880	**0.379**	**72.1**	***1350***	**3210**	6.71	**741**
MW #28	04/09/2008	**232**	**180**	**1.1**	<0.01	**0.576**	**89.7**	***816***		6.58	**1080**
MW #28	04/14/2009	**251**	**179**	**0.919**	<0.150	**0.484**	**99.8**	**567**	**2090**		**858**
MW #28	09/25/2009	**228**	**182**	**1.1**	<1.00	**0.38**	**102**	**460**	**1830**	6.6	**760**
MW #29	10/03/2006		***610***	***3.52***	**0.828**	**9.32**	**388**	***2480***	**5250**	6.67	**564**
MW #29	12/27/2006	**459**	***564***	***3.68***	**0.827**	**9.01**	**410**	***2440***	**5430**	6.72	**580**
MW #29	04/26/2007	**436**	***574***	***3.39***	**0.797**	**4.77**	**353**	***2620***	**5320**	6.9	**571**
MW #29	09/28/2007	**284**	***373***	***2.04***	<0.100	**3.65**	**351**	***1540***	**3570**	6.8	**652**
MW #29	04/09/2008	**393**	***495***	***2.54***	<0.01	**7.04**	**291**	***2650***		6.61	**510**
MW #29	09/26/2008	**397**	***481***	***2.07***	<0.01	**4.44**	**335**	***2140***	**4890**	6.59	**645**
MW #29	04/13/2009	**440**	***398***	***1.97***	<0.150	**3.18**	**415**	***1890***	**3900**		**591**
MW #29	09/24/2009	**397**	***454***	***1.69***	<1.00	**3.35**	**386**	***2140***	**4780**	6.65	**670**
MW #39	04/08/2008	**97.4**	***346***	***2.04***	<0.01	**0.482**	**890**	***813***		6.75	**1540**
MW #41	12/27/2006	**283**	***780***	**0.76**	<0.50	**0.612**	**601**	***1120***	**3910**	6.54	**978**
MW #41	04/27/2007	**260**	***678***	**0.827**	<0.0880	**0.568**	**510**	***1100***	**3480**	6.72	**951**
MW #41	10/01/2007	**261**	***996***	<0.100	<0.100	**0.631**	**584**	***1010***	**4200**	6.33	**1140**
MW #41	04/08/2008	**247**	***438***	**0.715**	<0.01	**0.54**	**451**	***1120***		6.44	**1110**
MW #41	09/29/2008	**290**	***855***	**0.628**	<0.01	**0.545**	**539**	***1170***	**4550**	6.34	**1120**
MW #41	04/13/2009	**316**	***995***	**0.522**	***1.08***	**0.87**	**680**	***1250***	**4430**		**1090**
MW #41	09/24/2009	**248**	***736***	**0.546**	<1.00	**0.502**	**504**	***1210***	**4070**	6.39	**1040**
MW #42	12/21/2006	**301**	***618***	**0.815**	<0.50	**0.526**	**473**	***910***	**3380**	6.59	**1100**
MW #42	04/27/2007	**214**	***650***	**0.897**	<0.0880	**0.847**	**393**	***920***	**3420**	6.85	**1000**
MW #42	10/01/2007	**192**	***602***	**0.722**	<0.100	**0.65**	**382**	***865***	**3350**	6.53	**1180**
MW #42	04/08/2008	**269**	***598***	<0.01	<0.01	**0.979**	**424**	***959***		6.49	**1200**
MW #42	09/29/2008	**217**	***601***	**0.753**	<0.01	**0.544**	**396**	***840***	**3490**	6.52	**953**
MW #42	04/13/2009	**203**	***693***	**0.502**	<0.150	**0.682**	**392**	***991***	**3460**		**875**
MW #42	09/24/2009	**237**	***750***	**0.605**	<1.00	**0.462**	**425**	***979***	**3680**	6.48	**1030**

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #43	10/02/2006		894	1.24	<0.50	0.596	706	232	2830	6.73	1130
MW #43	12/21/2006	112	797	0.837	<0.50	0.43	663	139	2600	6.86	1050
MW #43	04/26/2007	113	814	0.784	<0.0880	0.398	672	213	2870	7.13	1060
MW #43	09/27/2007	106	740	<0.100	<0.100	0.446	806	229	2700	7.03	1210
MW #43	04/08/2008	140	721	0.627	<0.01	0.47	614	215		6.67	1020
MW #43	09/29/2008	123	726	0.881	<0.01	0.495	745	188	2790	6.83	1200
MW #43	04/14/2009	99.6	652	0.624	<0.150	0.508	632	140	2290		1120
MW #43	09/28/2009	133	626	0.69	<0.500	0.561	584	128	2280	6.81	972
MW #45	09/29/2006		185	2.24	<0.50	4.97	375	2080	3820		334
MW #45	04/27/2007	362	265	2.16	<0.0880	4.42	315	1780	3370	7.35	290
MW #45	10/01/2007	372	324	1.69	<0.100	4.66	293	1810	3710	7	344
MW #45	04/09/2008	333	204	1.8	<0.01	3.97	221	1720		6.89	367
MW #45	09/25/2008	335	223	1.86	<0.01	4.02	220	1580	3320	6.92	355
MW #45	04/06/2009	383	264	1.75	<0.150	5.69	207	1690	3200		304
MW #45	09/24/2009	445	343	2	<1.00	4.59	228	1840	3850	6.86	320
MW #49	12/20/2006	190	513	1.24	<0.50	2.02	257	462	2280	6.71	691
MW #49	04/27/2007	203	494	1.31	<0.0880	1.7	288	449	2280	6.89	691
MW #49	09/28/2007	174	481	1.37	<0.100	2.14	275	433	2280	6.79	718
MW #49	04/08/2008	202	445	1.34	<0.01	2.14	285	359		6.5	818
MW #49	09/29/2008	204	499	1.22	<0.01	2.28	273	394	2360	6.57	719
MW #49	04/14/2009	216	541	0.977	1.07	2.12	298	358	2310		703
MW #50	10/16/2006		204	0.914	<0.50	2.17	143	1480	2750	6.77	323
MW #50	12/28/2006	454	195	0.854	<0.50	2.17	130	1360	2860	6.83	348
MW #50	04/25/2007	396	203	0.747	<0.0880	2.13	126	1380	2820	7.05	327
MW #50	09/28/2007	392	189	0.82	<0.100	2.16	130	1310	2680	6.95	351
MW #50	04/09/2008	346	172	0.766	<0.01	2.11	117	1320		6.69	359
MW #50	09/29/2008	433	181	0.759	<0.01	2.13	127	1240	2780	6.7	370
MW #50	04/09/2009	374	170	0.583	<0.150	2.11	116	1290	2700		304
MW #50	09/28/2009	373	167	0.863	0.565	2.37	114	1310	2690	6.84	311
MW #52	10/10/2006		287	1.85	3.96	0.406	453	1210	2830	6.89	615
MW #52	12/11/2006		264	1.73	4.34	0.536	400	1290	2910	6.83	569
MW #52	04/23/2007	207	375	1.67	4.63	0.356	371	1290	3130	7.03	521
MW #52	09/17/2007	192	304	1.58	2.87	0.344	346	1170	2830	6.69	540
MW #52	04/07/2008	197	345	1.67	<0.01	0.392	358	1090		6.67	590
MW #52	09/12/2008	234	283	1.64	<0.01	0.438	383	1090	2780	6.72	611
MW #52	04/08/2009	190	261	1.4	2.24	<0.20	342	1060	2600		616
MW #52	09/30/2009	165	180	1.42	2.18	0.328	314	1030	2330	7.02	552
MW #53	04/23/2007	255	90.8	0.947	<0.0880	1.06	98.2	1190	2190	7.12	266
MW #53	09/25/2007	259	99.8	<0.100	<0.100	9.4	96.9	1130	2080	6.91	269
MW #53	04/07/2008	262	71.3	0.835	<0.01	0.998	98.8	1090		6.86	285

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2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	Date	Calcium	Chloride	Fluoride	Nitrate/Nitrite as Nitrogen	Potassium	Sodium	Sulfate	Total Dissolved Solids	pH (pH units)	Total Alkalinity
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #53	09/12/2008	326	132	0.973	<0.01	1.15	84.4	1270	2490	6.63	261
MW #53	04/08/2009	330	119	0.848	0.507	1.07	98.1	1250	2370		265
MW #53	10/05/2009	282	135	0.99	2.27	0.91	92.7	1290	2460	6.95	223
MW #54A	04/23/2007	343	297	1.02	<0.0880	0.263	41.4	714	2070	6.82	465
MW #54A	09/25/2007	374	274	0.988	<0.100	0.293	44.1	706	1880	6.53	469
MW #54A	04/07/2008	378	287	0.836	<0.01	0.285	47.1	767		6.38	535
MW #54A	09/12/2008	481	277	1.22	<0.01	0.471	50.5	764	2590	6.41	504
MW #54A	04/08/2009	384	286	0.668	<0.150	<0.20	48.4	754	2230		520
MW #54A	10/05/2009	373	249	0.768	<0.500	<0.200	53.8	779	2240	6.59	408
MW #55	04/27/2007	447	296	0.911	3.94	0.645	204	2130	4110	7.09	370
MW #55	10/01/2007	459	293	0.762	3.85	0.806	209	2170	4290	6.74	359
MW #55	04/09/2008	430	296	<0.01	<0.01	0.749	209	2130		6.61	354
MW #55	09/26/2008	572	227	1.3	<0.01	0.975	262	3010	5500	6.81	288
MW #55	04/10/2009	447	278	0.911	6.23	0.897	218	2140	4190		313
MW #55	09/24/2009	476	277	1.15	6.58	0.934	241	2480	4850	6.73	280
MW #56	09/29/2006		300	1.29	0.655	2.1	287	1860	3690		407
MW #56	12/27/2006	451	248	1.19	<0.50	2.58	228	1830	3660	6.75	379
MW #56	04/30/2007	479	273	1.04	<0.0880	2.02	203	1780	3480	6.76	383
MW #56	10/01/2007	449	325	0.922	1.36	2.07	192	1630	3430	6.73	400
MW #56	04/09/2008	436	426	<0.01	<0.01	1.79	220	1700		6.52	516
MW #56	09/16/2008	516	310	1.01	<0.01	2.2	266	1830	3890	6.61	450
MW #56	04/10/2009	524	329	0.75	0.619	2.09	217	1920	3940		432
MW #56	09/24/2009	504	337	0.854	<1.00	1.99	190	1850	4030	6.65	380
MW #58	10/17/2006		343	1.06	<0.50	<0.20	108	206	1550	6.55	721
MW #58	12/11/2006		341	0.957	<0.50	0.221	105	219	1500	6.55	717
MW #58	04/24/2007	249	331	1.03	<0.0880	2.48	83.7	218	1480	6.71	905
MW #58	09/17/2007	190	340	0.884	<0.100	<0.020	91.4	232	1720	6.37	739
MW #58	04/07/2008	185	319	0.822	<0.01	<0.02	91.8	201		6.4	793
MW #58	09/12/2008	234	328	0.987	<0.01	0.41	108	228	1640	6.41	805
MW #58	04/08/2009	214	327	0.701	<0.150	<0.20	102	209	1610		770
MW #58	09/30/2009	222	317	1.11	<0.500	0.281	105	95.9	1500	6.84	794
MW #61	12/08/2006		451	0.964	<0.50	0.893	169	721	2470	6.81	664
MW #61	04/24/2007	264	468	0.966	<0.0880	0.557	164	790	2850	7.03	608
MW #61	09/27/2007	293	455	0.908	<0.100	0.441	186	690	2740	6.72	676
MW #61	04/08/2008	429	1440	0.655	<0.01	0.769	260	623		6.51	580
MW #61	09/16/2008	477	1860	0.498	<0.01	0.804	332	914	5740	6.66	674
MW #61	04/09/2009	438	1190	0.703	<0.150	0.846	382	1010	4670		653
MW #61	10/01/2009	445	1050	0.858	<0.500	0.684	467	824	4320	6.68	658

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2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #62	12/21/2006	**414**	**118**	**0.949**	<0.50	**1.7**	**160**	**342**	**1620**	6.82	**774**
MW #62	09/27/2007	**210**	**115**	**0.947**	<0.100	**1**	**178**	**399**	**1760**	6.55	**974**
MW #62	04/08/2008	**180**	**128**	**0.855**	<0.01	**0.86**	**195**	**272**		6.58	**957**
MW #62	09/16/2008	**198**	**177**	**0.601**	<0.01	**0.816**	**185**	**235**	**1620**	6.68	**872**
MW #62	04/14/2009	**186**	**171**	**0.72**	<0.150	**1.08**	**177**	**158**	**1600**		**943**
MW #62	10/01/2009	**180**	**201**	**0.888**	<0.500	**0.907**	**168**	**105**	**1600**	6.69	**806**
MW #63	12/08/2006		***584***	**1.53**	<0.50	**0.8**	**316**	**109**	**2000**	6.69	**748**
MW #63	04/24/2007	**180**	***547***	**1.26**	<0.0880	**0.614**	**279**	**99.6**	**1810**	7.05	**741**
MW #63	04/26/2007	**176**	**134**	**0.861**	<0.0880	**0.826**	**156**	**277**	**1590**	6.92	**776**
MW #63	09/28/2007	**167**	***547***	**1.21**	<0.100	**0.481**	**265**	**82.3**	**1970**	6.6	**750**
MW #63	04/08/2008	**163**	***486***	**1.12**	<0.01	**0.476**	**235**	**78.6**		6.6	**834**
MW #63	09/16/2008	**192**	***569***	**1.03**	<0.01	**0.526**	**247**	**89.5**	**1890**	6.63	**777**
MW #66	12/27/2006	**175**	**228**	**1.02**	**0.932**	**1.22**	**179**	<1	**1180**	6.69	**748**
MW #66	04/26/2007	**146**	**236**	**0.995**	<0.0880	**0.884**	**167**	**6.37**	**1140**	6.95	**781**
MW #66	10/01/2007	**154**	**209**	**1.2**	<0.100	**1.39**	**156**	**3.68**	**1130**	6.76	**779**
MW #66	04/09/2008	**180**	**246**	**0.994**	<0.01	**0.868**	**195**	**5.01**		6.63	**978**
MW #66	09/25/2008	**180**	**219**	**1.03**	<0.01	**3.11**	**162**	**1.37**	**1140**	6.62	**945**
MW #66	04/14/2009	**153**	**238**	**0.901**	<0.150	**1.09**	**191**	**6.21**	**1230**		**883**
MW #66	09/25/2009	**136**	**231**	**1.05**	<0.100	**0.74**	**177**	**6.96**	**1230**	6.74	**750**
MW #67	12/28/2006	**200**	**235**	**0.62**	<0.5	**0.8**	**164**	**453**	**1820**	6.74	**643**
MW #67	04/25/2007	**207**	***259***	**0.567**	<0.0880	**0.572**	**140**	**470**	**1840**	6.97	**603**
MW #67	09/28/2007	**187**	***281***	**0.614**	<0.100	**0.511**	**150**	**370**	**1770**	6.83	**656**
MW #67	04/09/2008	**194**	***251***	**0.546**	<0.01	**0.415**	**139**	**360**		6.57	**707**
MW #67	09/16/2008	**206**	***288***	**0.204**	<0.01	**0.466**	**133**	**393**	**1770**	6.68	**690**
MW #67	04/14/2009	**177**	**238**	<0.250	<0.150	**0.632**	**127**	**322**	**1590**		**729**
MW #67	10/01/2009	**254**	**202**	<0.500	<0.500	**0.719**	**142**	**558**	**2030**	6.73	**544**
MW #68	10/12/2006		**234**	***2.1***	***1.62***	**4.22**	**192**	***1400***	**2740**	6.94	**266**
MW #68	12/15/2006	**494**	**206**	***1.76***	***1.23***	**4.18**	**213**	***1290***	**2740**	7.02	**485**
MW #68	04/23/2007	**251**	**195**	***1.9***	***1.23***	**3.77**	**159**	***1220***	**2410**	7.17	**266**
MW #68	09/26/2007	**203**	**140**	**1.4**	<0.100	**3.3**	**137**	***982***	**2110**	7.06	**275**
MW #68	04/03/2008	**254**	**120**	***1.9***	<0.01	**4.28**	**131**	***918***	**2040**	7.08	**338**
MW #68	09/23/2008	**313**	***260***	***1.74***	<0.01	**4.04**	**179**	***1130***	**2730**	6.98	**281**
MW #68	04/03/2009	**239**	**186**	***1.8***	***3.32***	**3.81**	**142**	***1150***	**2290**		**234**
MW #68	09/29/2009	**379**	***381***	***1.61***	***9.38***	**4.63**	**221**	***1380***	**3200**	6.91	**281**

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2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	Date	Calcium	Chloride	Fluoride	Nitrate/Nitrite as Nitrogen	Potassium	Sodium	Sulfate	Total Dissolved Solids	pH (pH units)	Total Alkalinity
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #70	10/18/2006		1200	0.734	<0.50	5.31	686	2100	5280	6.87	196
MW #70	12/14/2006	702	1280	0.652	<0.5	5.51	701	2210	5570	7.13	209
MW #70	04/18/2007	647	1220	0.618	<0.0880	4.61	656	2130	5150	7.1	220
MW #70	09/24/2007	650	1140	0.725	<0.100	4.88	664	2040	4830	7.24	244
MW #70	04/01/2008	668	1040	0.726	<0.01	4.33	673	1910	5210	7.08	246
MW #70	09/17/2008	661	1100	0.731	<0.01	4.54	633	1990	5260	7.13	234
MW #70	04/02/2009	647	1100	<0.250	<0.150	4.38	637	2010	4990		264
MW #70	09/22/2009	576	1050	0.606	<1.00	4.69	534	1970	5390	7.04	217
MW #72	04/17/2007	633	3490	6.77	<0.0880	9.73	2500	3130	10300	6.77	450
MW #72	09/24/2007	660	3440	5.97	<0.100	8.64	2220	2920	9850	6.9	382
MW #72	04/02/2008	658	3730	6.54	<0.01	8.36	2110	3080	11000	6.77	406
MW #72	09/11/2008	882	3970	5.61	<0.01	10	2580	3140		6.72	369
MW #72	03/30/2009	762	3800	5.84	<0.150	8.88	2130	2760	10600		317
MW #72	09/18/2009	747	4050	5.36	<1.00	9.55	2200	2820	10800	6.7	228
MW #73	04/17/2007	684	2450	1.96	<0.0880	2.83	2250	3940	10200	6.97	480
MW #73	09/18/2007	584	2400	1.62	<0.100	2.2	1940	3870	10100	6.83	437
MW #73	04/03/2008	546	2450	1.87	<0.01	2.7	2070	3930	10300	6.91	536
MW #73	09/10/2008	600	2360	<0.01	<0.01	2.4	2330	3700		7.13	514
MW #73	03/30/2009	571	2410	2.06	<0.150	2.2	2040	3770	10200		452
MW #73	09/18/2009	542	2290	3.38	1.44	3.71	2190	3570	9130	7.16	402
MW #74	04/16/2007	780	2130	8.41	<0.0880	41.4	2380	3310	8450	6.87	396
MW #74	09/18/2007	568	2090	7.87	<0.100	42.6	1830	3330	8460	6.87	374
MW #74	04/03/2008	519	2100	8.6	<0.01	37.6	1770	3320	8480	6.98	388
MW #74	09/11/2008	612	2360	7.41	<0.01	35.8	1920	3720		7.05	403
MW #74	03/30/2009	636	2060	8.53	0.552	36.2	1930	3270	8140		360
MW #74	09/18/2009	582	2050	8.73	3.16	37.9	1880	3240	8610	6.95	373
MW #75	04/16/2007	416	1650	8.47	<0.0880	21.2	1670	2120	6220	6.95	615
MW #75	09/18/2007	320	1600	7.99	<0.100	21	1370	2040	6320	6.94	603
MW #75	04/03/2008	339	1600	8.43	<0.01	25.8	1400	2050	6260	6.97	623
MW #75	09/11/2008	418	1670	8.44	<0.01	23.7	1610	2180		7.11	630
MW #75	03/30/2009	340	1480	9.93	<0.150	21.5	1510	2020	5840		509
MW #75	09/18/2009	322	1500	8.48	<1.00	18.1	1370	1840	5900	6.94	591
MW #76	04/17/2007	482	1000	4.02	<0.0880	24.1	1250	2190	5470	7.03	417
MW #76	09/18/2007	325	1130	3.59	<0.100	23.6	901	2170	5430	6.96	394
MW #76	04/03/2008	369	1210	3.35	<0.01	28.1	938	2010	5630	7.02	301
MW #76	09/11/2008	510	1510	3.61	<0.01	26.3	1120	2300		7.08	323
MW #76	03/31/2009	415	1400	3.32	0.724	25.2	949	1960	5460		266
MW #76	09/17/2009	450	1310	3.22	<1.00	23.6	1130	2000	5710	6.9	344

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		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #77	04/17/2007	**583**	***1620***	***3.67***	<0.0880	**35.2**	**1580**	***2180***	**6130**	6.93	**501**
MW #77	09/18/2007	**416**	***1710***	***2.46***	<0.100	**45.3**	**1200**	***2310***	**6310**	6.84	**414**
MW #77	04/03/2008	**382**	***1620***	***3.3***	<0.01	**29.8**	**1130**	***2110***	**6520**	6.91	**412**
MW #77	09/11/2008	**651**	***1600***	***2.3***	<0.01	**51**	**1650**	***2750***		6.99	**659**
MW #77	03/31/2009	**439**	***1580***	***2.76***	<0.0600	**43.3**	**1210**	***2420***	**6460**		**463**
MW #77	09/17/2009	**445**	***1510***	***2.53***	<1.00	**49.7**	**1380**	***2310***	**6080**	6.89	**494**
MW #78	04/17/2007	**432**	***1370***	***4.43***	<0.0880	**25.7**	**1150**	***2240***	**5950**	6.97	**490**
MW #78	09/18/2007	**305**	***1420***	***8.83***	<0.100	**26.7**	**937**	***1980***	**5480**	6.91	**402**
MW #78	04/03/2008	**360**	***1590***	***4.9***	<0.01	**27.9**	**1120**	***1970***	**6290**	7.05	**378**
MW #78	09/11/2008	**349**	***1680***	***6.16***	<0.01	**28.6**	**1160**	***2010***		7.06	**344**
MW #78	03/31/2009	**372**	***1110***	***8.38***	<0.0600	**21.9**	**835**	***2000***	**5420**		**443**
MW #78	09/17/2009	**339**	***1080***	***11.1***	<1.00	**20.3**	**805**	***1760***	**5030**	6.83	**358**
MW #79	04/17/2007	**375**	***1610***	***13.2***	***14.7***	**11**	**1630**	***2480***	**6660**	7.23	**388**
MW #79	04/03/2008	**336**	***1800***	***13.2***	<0.01	**9.3**	**1310**	***2210***	**6620**	7.32	**292**
MW #79	09/10/2008	**454**	***1940***	***10.7***	<0.01	**10.9**	**1490**	***2120***		7.14	**259**
MW #79	03/31/2009	**562**	***2120***	***11.4***	**0.762**	**10.1**	**1490**	***2230***	**6600**		**246**
MW #79	09/18/2009	**607**	***2170***	***10.2***	<1.00	**9.8**	**1400**	***2180***	**7770**	6.94	**218**
MW #80	04/17/2007	**583**	***1950***	***5.29***	<0.0880	**5.54**	**1260**	***2510***	**7170**	6.96	**307**
MW #80	04/03/2008	**495**	***1720***	***4.01***	<0.01	**4.02**	**1040**	***2210***	**6270**	6.98	**248**
MW #80	09/10/2008	**549**	***1240***	***4.25***	<0.01	**3.67**	**1060**	***2030***		7.22	**227**
MW #80	03/31/2009	**535**	***1300***	***4.75***	**0.809**	**3.56**	**1200**	***1900***	**5110**		**207**
MW #80	09/18/2009	**537**	***1340***	***4.28***	<1.00	**3.57**	**851**	***1930***	**5650**	6.96	**184**
MW #81	04/17/2007	**582**	***1270***	***9.33***	**0.559**	**10.1**	**932**	***1990***	**5290**	7.12	**225**
MW #81	09/18/2007	**536**	***1360***	***9.15***	***4.5***	**9.64**	**796**	***2060***	**5180**	6.96	**229**
MW #81	04/03/2008	**497**	***1370***	***9.58***	<0.01	**7.67**	**862**	***2030***	**5600**	7.01	**251**
MW #81	09/10/2008	**518**	***1450***	***7.64***	<0.01	**8.19**	**870**	***1990***		7.09	**249**
MW #81	03/31/2009	**566**	***1490***	***8.92***	***21.6***	**8.81**	**1060**	***2260***	**6140**		**286**
MW #81	09/18/2009	**501**	***1290***	***8.55***	***4.57***	**6.5**	**993**	***1990***	**4990**	6.94	**218**
MW #82	04/16/2007	**471**	***1540***	***8.91***	<0.0880	**7.41**	**2030**	***2420***	**7040**	6.95	**840**
MW #82	09/18/2007	**348**	***1530***	***10.7***	<0.100	**8.35**	**1780**	***2480***	**6910**	7.03	**818**
MW #82	04/02/2008	**245**	***1450***	***12***	<0.01	**8.22**	**1340**	***2280***	**6500**	7.02	**798**
MW #82	09/10/2008	**387**	***1410***	***10.8***	<0.01	**8.11**	**1790**	***2390***		7.14	**794**
MW #82	03/31/2009	**348**	***1460***	***13.1***	<0.150	**8.91**	**1630**	***2380***	**6320**		**852**
MW #82	09/21/2009	**327**	***1480***	***13.4***	<1.00	**9.14**	**1640**	***2420***	**7090**	7.03	**718**
MW #83	04/16/2007	**485**	***1310***	***3.21***	<0.0880	**30.6**	**1100**	***1760***	**4960**	6.96	**464**
MW #83	09/18/2007	**318**	***1080***	***3.76***	<0.100	**23.5**	**754**	***2160***	**5420**	6.9	**465**
MW #83	04/02/2008	**290**	***1350***	***3.19***	<0.01	**19.8**	**794**	***1530***	**5310**	7	**548**
MW #83	09/11/2008	**403**	***1280***	***3.86***	<0.01	**20.6**	**968**	***1970***		7.02	**516**
MW #83	03/31/2009	**339**	***1180***	***4.03***	<0.150	**29.2**	**946**	***1840***	**5050**		**502**
MW #83	09/21/2009	**386**	***715***	***4.32***	<1.00	**41.8**	**1010**	***2950***	**6690**	6.79	**655**

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	Date	Calcium	Chloride	Fluoride	Nitrate/Nitrite as Nitrogen	Potassium	Sodium	Sulfate	Total Dissolved Solids	pH (pH units)	Total Alkalinity
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #84	04/16/2007	1100	2030	2.8	<0.0880	19.8	1910	3460	8780	6.94	636
MW #84	09/18/2007	550	1860	3.66	<0.100	6.56	1230	3550	9200	6.89	402
MW #84	04/02/2008	495	1930	4.36	<0.01	8.11	1200	3550	9200	6.96	418
MW #84	09/10/2008	653	1590	4.3	<0.01	7.81	1450	3580		7.02	449
MW #84	03/31/2009	608	1770	4.84	<0.150	6.64	1400	3490	8470		561
MW #84	09/21/2009	654	2010	4.84	<1.00	6.32	1560	3780	8380	6.86	434
MW #85	04/16/2007	349	746	2.33	<0.0880	3.15	711	1580	3750	7.11	209
MW #86	04/16/2007	538	1290	1.61	<0.0880	4.02	1080	1660	4620	6.89	183
MW #87	04/18/2007	750	4590	1.39	<0.0880	19.1	2910	4420	14000	6.96	470
MW #88	04/19/2007	520	4270	2.49	<0.0880	3.44	2860	4680	13800	6.99	320
MW #88	09/24/2007	394	1670	0.986	<0.100	3.4	1040	2230	5740	7.18	242
MW #88	04/02/2008	558	1740	1.04	<0.01	3.14	1390	2230	6440	6.99	228
MW #88	04/07/2008										
MW #88	09/22/2008	441	1450	0.944	<0.01	3.7	1070	1990	5530	6.92	239
MW #88	04/06/2009	374	1470	0.733	0.595	3.79	1010	1890	5580		201
MW #88	09/23/2009	348	1370	0.814	<1.00	2.79	973	1800	5380	7.17	207
MW #89	04/01/2008	466	240	1.87	<0.01	10.1	161	1710	3310	6.96	222
MW #89	09/10/2008	502	245	1.97	<0.01	14.7	175	1560		7.14	264
MW #89	04/02/2009	536	419	2.31	0.55	8.33	188	3190	3040		186
MW #89	09/17/2009	493	218	3.09	<1.00	10.7	180	1630	3020	6.93	199
MW #90	05/29/2008	277	69.1	0.892	<0.01	0.738	184	1150	2730	6.69	598
MW #90	09/25/2008	321	193	2.54	<0.01	2.83	420	2640	5060	6.79	546
MW #90	04/15/2009	283	114	1.31	<0.150	1.69	311	1640	3770		567
MW #90	10/01/2009	273	98.9	1.27	<0.500	1.26	279	1500	3420	6.73	603
MW #91	05/29/2008	256	67.2	0.902	<0.01	0.402	49	544	2030	6.53	795
MW #91	09/16/2008	260	78	0.373	<0.01	0.769	50.1	621	2020	6.65	793
MW #91	04/15/2009	241	48.8	0.625	<0.150	0.523	51.3	535	1820		713
MW #91	10/01/2009	284	20.1	1.12	0.562	0.354	43	790	2250	6.57	722
MW #92	05/29/2008	172	486	0.832	<0.01	0.545	333	315	2410	6.51	1200
MW #92	09/25/2008	162	426	0.673	<0.01	0.488	340	376	2400	6.6	933
MW #92	04/15/2009	172	401	0.549	<0.150	0.59	325	310	2280		970
MW #92	10/01/2009	137	603	0.871	<0.100	0.922	446	40	2260	6.67	1100
MW #93	05/29/2008	778	75.9	1.6	<0.01	8.28	95.7	713	1970	6.99	549
MW #93	09/25/2008	622	78.6	0.878	<0.01	5.63	88.7	932	2330	6.96	510
MW #93	04/15/2009	329	60.1	1.26	<0.150	4.55	90.3	817	2000		529
MW #93	10/01/2009	314	46.7	1.32	<0.500	2.6	77.5	709	1920	6.88	480
MW #95	05/29/2008	218	251	0.643	<0.01	0.508	105	426	1990	6.65	861
MW #95	09/16/2008	269	306	0.216	<0.01	0.327	100	648	2130	6.66	636
MW #95	04/15/2009	240	261	<0.250	<0.150	0.446	112	477	1980		669
MW #95	10/01/2009	216	235	0.657	<0.500	0.339	112	488	2060	6.74	643

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		Water Quality Parameters (mg/L, except for pH)									
Sample ID	Date	Calcium	Chloride	Fluoride	Nitrate/Nitrite as Nitrogen	Potassium	Sodium	Sulfate	Total Dissolved Solids	pH (pH units)	Total Alkalinity
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
MW #96	05/29/2008	169	247	0.988	<0.01	0.893	215	293	1930	6.68	837
MW #96	09/25/2008	194	250	0.888	<0.01	1.28	216	294	1750	6.82	961
MW #96	04/15/2009	164	248	0.667	<0.150	0.829	214	308	1880		839
MW #96	10/01/2009	178	222	1.04	0.633	0.832	251	243	1790	6.75	757
MW #98	05/30/2008	311	38	0.966	<0.01	0.352	209	1910	3870	6.78	472
MW #98	09/25/2008	311	22.9	0.842	<0.01	0.344	123	1670	3410	6.81	439
MW #98	04/15/2009	294	18.3	0.73	<0.150	<0.20	72.9	1610	2860		320
MW #98	09/28/2009	419	55.4	1.64	<0.500	0.214	77	2040	3810	6.85	518
MW #99	09/25/2008	185	290	0.415	<0.01	0.578	200	236	1780	6.53	828
MW #99	04/15/2009	177	248	<0.250	<0.150	0.594	133	218	1390		616
MW #99	09/28/2009	190	249	<0.500	<0.500	0.57	206	205	1680	6.78	774
MW #101	05/30/2008	219	250	0.829	<0.01	0.478	170	239	1550	6.63	693
MW #101	09/16/2008	221	291	0.642	<0.01	0.635	157	263	1530	6.5	690
MW #101	04/15/2009	171	289	<0.250	<0.150	0.581	180	229	1680		718
MW #101	09/28/2009	196	241	0.847	<0.500	0.614	147	212	1440	6.65	617
MW #103	09/26/2008								1860		
MW #103	03/16/2009	12.1	919	12	<0.100	1.15	1050	42.5	2710	7.78	1020
MW #103	09/28/2009	13.4	819	11.7	<0.500	0.92	1010	39.8	2700	7.7	1060
MW #104	09/26/2008								1810		
MW #104	03/16/2009	208	64.8	2.91	<0.100	5.01	38.3	620	1180	7.18	139
MW #104	09/28/2009	291	74.1	2.33	<0.500	6.69	61.4	730	1560	6.91	202
MW #106	09/28/2009	416	83.2	0.989	0.507	2.46	194	1880	3680	6.9	508
MW #107	09/28/2009	161	306	0.918	<0.500	1.77	68.7	<2.50	1570	6.85	730
MW #108	10/01/2009	396	120	4.93	0.544	6.87	73.9	978	2580	6.69	593
NCL #32	04/25/2007	440	187	1.7	<0.0880	4.46	70.3	1110	2380	6.98	363
NCL #32	10/01/2007	384	130	1.56	5.94	5.28	55.5	945	2040	6.75	310
NCL #32	04/08/2008	431	176	1.74	<0.01	7.42	61.6	1060		6.58	387
NCL #32	09/16/2008	1170	234	1.57	<0.01	5.51	62.4	1280	2470	6.73	355
NCL #32	04/10/2009	453	204	1.49	<0.150	5.83	64.8	1130	2560		386
NCL #32	09/24/2009	989	198	2.54	<1.00	25.3	76.4	1100	2540	6.5	290
NCL #33	04/25/2007	406	372	2.36	0.961	4.16	89	821	2370	6.75	501
NCL #33	10/01/2007	373	356	2.31	1.16	4.03	82.9	908	2590	6.45	504
NCL #33	04/09/2008	388	473	2.25	<0.01	3.88	79.1	824		6.42	528
NCL #33	09/29/2008	546	516	1.94	<0.01	4.39	99.7	767	2720	6.38	523
NCL #33	04/10/2009	476	511	2.22	1.03	4.06	94.4	937	3160		483
NCL #33	09/24/2009	430	468	2.4	<1.00	4.8	88	882	3010	6.29	450

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		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
NCL #34	04/25/2007	**187**	**224**	**1.31**	<0.0880	**0.986**	**105**	**124**	**1300**	6.84	**623**
NCL #34	10/01/2007	**166**	**248**	**1.36**	<0.100	**1.04**	**109**	**117**	**1390**	6.62	**586**
NCL #34	04/09/2008	**205**	***268***	**1.27**	<0.01	**1.04**	**98.2**	**155**		6.48	**582**
NCL #34	09/16/2008	**216**	**213**	**1.03**	<0.01	**0.911**	**99.8**	**142**	**1270**	6.67	**694**
NCL #34	04/10/2009	**256**	***434***	***2.22***	***1.03***	**1.75**	**112**	**134**	**1860**		**570**
NCL #34	09/24/2009	**230**	***379***	**1.28**	<1.00	**2.04**	**121**	**128**	**1890**	6.35	**550**
NCL #44	04/25/2007	**280**	**167**	**1.28**	<0.0880	**2.27**	**70.8**	***636***	**1730**	6.9	**526**
NCL #44	10/01/2007	**208**	**149**	***1.61***	<0.100	**1.92**	**59.3**	**501**	**1560**	6.57	**488**
NCL #44	04/08/2008	**227**	**181**	**1.54**	<0.01	**1.96**	**56.1**	**487**		6.52	**568**
NCL #44	09/16/2008	**282**	**169**	**1.49**	<0.01	**2.09**	**60.4**	**485**	**1700**	6.45	**591**
NCL #44	04/10/2009	**268**	**171**	**1.35**	<0.150	**1.95**	**54.5**	**496**	**1800**		**630**
NCL #44	09/24/2009	**249**	**185**	**1.4**	<1.00	**2.15**	**59.2**	**469**	**1710**	6.37	**550**
NCL #49	04/23/2007	**410**	**204**	**0.62**	***11.2***	**0.762**	**106**	***1630***	**3020**	7.11	**204**
NCL #49	09/25/2007	**426**	**194**	**0.52**	***11***	**0.684**	**112**	***1670***	**3080**	6.98	**212**
NCL #49	04/07/2008	**431**	**170**	**0.404**	<0.01	**0.696**	**115**	***1760***		6.74	**232**
NCL #49	09/12/2008	**464**	**166**	**0.567**	<0.01	**0.73**	**122**	***1720***	**3310**	6.65	**242**
NCL #49	04/08/2009	**461**	**165**	<0.250	***9.65***	**0.708**	**117**	***1720***	**3180**		**260**
NCL #49	10/05/2009	**443**	**152**	**0.561**	***9.33***	**0.458**	**123**	***1630***	**3190**	7.03	**224**
NP #1	10/10/2006										
NP #1	12/18/2006										
NP #1	04/23/2007										
NP #1	09/26/2007										
NP #1	04/03/2008										
NP #1	09/23/2008										
NP #1	04/08/2009										
NP #1	09/30/2009										
NP #2	10/10/2006										
NP #2	12/18/2006										
NP #2	04/23/2007										
NP #2	09/26/2007										
NP #2	04/03/2008										
NP #2	09/23/2008										
NP #2	04/08/2009										
NP #2	09/30/2009										

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2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
NP #3	10/12/2006		212	2.07	<0.5	4.73	172	1610	3020	6.89	282
NP #3	12/11/2006		204	1.95	<0.50	3.59	169	1600	3160	7.05	253
NP #3	04/19/2007	372	256	1.66	<0.0880	3	152	1740	3110	7.01	279
NP #3	09/26/2007	310	234	1.54	<0.10	2.98	137	1480	2890	7.01	279
NP #3	04/07/2008	494	249	1.58	<0.01	3.68	174	1960		6.88	267
NP #3	09/23/2008	378	216	1.57	<0.01	2.68	155	1480	3220	7.09	267
NP #3	04/03/2009	459	321	1.32	<0.150	4.32	199	2030	3460		277
NP #3	10/05/2009	322	242	1.74	0.838	2	143	1700	3330	6.75	263
NP #5	10/03/2006		204	2.46	3.27	0.527	546	4340	7240	6.94	297
NP #5	12/15/2006	531	181	2.58	2.7	0.569	546	4270	7130	7.08	295
NP #5	04/19/2007	536	162	2.76	1.81	1.68	584	4220	6890	7.04	284
NP #5	10/02/2007	448	230	2.27	3.89	0.909	510	3910	6690	7.11	318
NP #5	04/07/2008	430	153	2.63	<0.01	0.729	480	4160		6.95	305
NP #5	09/23/2008	525	161	2.33	<0.01	0.474	545	4040	7210	7.05	285
NP #5	04/08/2009	527	171	2.62	<0.150	0.441	516	4470	6930		289
NP #5	10/05/2009	418	164	2.7	5.75	0.212	413	3980	6690	7.03	258
NP #6	10/10/2006		652	2.61	29.2	3.22	433	2860	5750	6.96	282
NP #6	12/18/2006	560	587	2.35	20.8	3.36	444	2910	5800	6.91	285
NP #6	04/23/2007	536	469	2.36	7.31	2.98	428	3440	6300	7.04	296
NP #6	09/26/2007	487	608	1.97	27	3.01	423	2910	5850	6.87	292
NP #6	04/03/2008	560	472	2.36	<0.01	3.42	453	3170	5850	6.88	353
NP #6	09/23/2008	565	707	1.94	<0.01	3.25	437	2660	6070	6.83	292
NP #6	04/08/2009	577	671	1.93	36.4	3.23	416	2640	5180		313
NP #6	10/05/2009	500	780	2.22	41.9	2.71	373	2710	6660	6.82	278
NP #9	10/03/2006		290	3.02	0.929	0.995	147	2310	4240	6.86	294
NP #9	12/27/2006	475	218	2.96	0.51	1.08	178	2180	4220	6.89	759
NP #9	04/27/2007	489	234	2.9	0.44	0.715	151	2210	4240	7.11	370
NP #9	04/28/2008	460	641	2.84	<0.01	1.4	156	2460	4800	6.74	421
NP #9	09/30/2008	518	393	2.37	<0.01	0.95	188	2130	4230	6.63	446
NP #9	04/10/2009	508	403	2.7	<0.150	1.59	215	2180	4420		451
NP #9	09/24/2009	522	420	2.72	<1.00	1.36	207	2270	4740	6.63	460
OCD #1R	09/25/2007	521	2570	5.73	<0.100	5.84	1560	2430	7750	7.11	310
OCD #1R	04/01/2008	655	2340	5.59	<0.01	5.47	1560	2480	7800	7.01	251
OCD #1R	09/15/2008	576	4270	5.18	<0.01	6.29	2340	3670	12000	6.93	272
OCD #1R	04/01/2009	569	2170	5.26	<0.150	5.21	1220	2220	6220		172
OCD #1R	09/21/2009	559	2410	5.46	<1.00	5.36	1500	2340	8560	7.06	222

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
OCD #2A	09/25/2007	**582**	***1830***	**0.691**	<0.100	**3.85**	**927**	***1950***	**6130**	7.18	**172**
OCD #2A	04/01/2008	**458**	***1760***	<0.01	<0.01	**3.48**	**1140**	***2380***	**6850**	7.17	**227**
OCD #2A	09/15/2008	**507**	***2020***	**1.02**	<0.01	**3.88**	**1050**	***2460***	**6760**	7.09	**182**
OCD #2A	04/01/2009	**590**	***2360***	**0.811**	<0.150	**4.09**	**1250**	***2770***	**7080**		**175**
OCD #2A	09/22/2009	**482**	***1570***	**0.718**	<1.00	**3.64**	**825**	***1770***	**5380**	7.17	**169**
OCD #3	09/25/2007	**507**	***1470***	**0.837**	<0.100	**13.7**	**955**	***1720***	**4930**	7.34	**212**
OCD #3	04/01/2008	**604**	***1890***	<0.01	<0.01	**14.1**	**1360**	***2380***	**7190**	7.2	**279**
OCD #3	09/15/2008	**434**	***1700***	**1.03**	<0.01	**13.8**	**1100**	***2290***	**6260**	7.15	**223**
OCD #3	04/01/2009	**426**	***1010***	**0.783**	<0.150	**12.9**	**596**	***1350***	**3700**		**125**
OCD #3	09/22/2009	**377**	***958***	**0.949**	<1.00	**11.4**	**490**	***1490***	**4120**	7.23	**130**
OCD #4	09/25/2007	**799**	***4200***	<0.100	<0.100	**36.4**	**2380**	***2620***	***10400***	7.25	**201**
OCD #4	04/01/2008	**832**	***4540***	<0.01	<0.01	**35.2**	**2550**	***2660***	***12500***	7.17	**205**
OCD #4	09/15/2008	**674**	***4780***	<0.01	<0.01	**37.5**	**2550**	***2680***	***13100***	7.05	**228**
OCD #4	04/01/2009	**777**	***4630***	**0.595**	<0.150	**35.4**	**2380**	***2910***	***10800***		**161**
OCD #4	09/22/2009	**743**	***4590***	**0.723**	<1.00	**33.4**	**2460**	***2770***	***10800***	7.22	**193**
OCD #5	09/25/2007	**741**	***4670***	<0.100	<0.100	**34**	**2580**	***2740***	***11700***	7.24	**231**
OCD #5	04/01/2008	**746**	***4720***	<0.01	<0.01	**31.9**	**2710**	***2640***	***12900***	7.09	**217**
OCD #5	09/15/2008	**621**	***5710***	<0.01	<0.01	**28.8**	**2560**	***3360***	***12600***	7.02	**277**
OCD #5	04/01/2009	**789**	***4950***	**0.614**	<0.150	**32.8**	**2820**	***2990***	***11600***		**184**
OCD #5	09/22/2009	**764**	***4690***	**0.754**	<1.00	**29.9**	**2780**	***2890***	***12600***	7.14	**217**
OCD #6	09/19/2007	**535**	***3400***	***2.86***	<0.100	**11.4**	**2290**	***3600***	***10800***	6.96	**599**
OCD #6	04/02/2008	**614**	***3510***	***3.37***	<0.01	**10.2**	**2720**	***3560***	***11400***	6.93	**380**
OCD #6	09/17/2008	**594**	***4130***	***2.44***	<0.01	**12.6**	**2470**	***3900***	***11700***	6.99	**648**
OCD #6	04/01/2009	**599**	***3480***	***3.22***	<0.150	**11.6**	**2710**	***3270***	***11400***		**566**
OCD #6	09/21/2009	**545**	***3680***	***3.29***	<1.00	**12.2**	**2590**	***3170***	***11300***	6.93	**564**
OCD #7A	09/19/2007	**521**	***2260***	***4.42***	<0.100	**6.94**	**1790**	***3300***	**8700**	6.94	**536**
OCD #7A	04/02/2008	**541**	***2260***	***4.73***	<0.01	**7.13**	**1930**	***3230***	**9120**	6.93	**283**
OCD #7A	09/17/2008	**614**	***2560***	***4.8***	<0.01	**7.49**	**2060**	***3690***	**9350**	6.93	**605**
OCD #7A	04/01/2009	**550**	***2170***	***4.57***	**0.673**	**7.16**	**2000**	***3050***	**9210**		**601**
OCD #7A	09/21/2009	**588**	***2200***	***4.32***	<1.00	**7.32**	**2040**	***3280***	**9530**	6.95	**540**
OCD #8A	09/19/2007	**578**	***3450***	***2.05***	<0.100	**8.26**	**2070**	***3830***	***11300***	6.85	**520**
OCD #8A	04/01/2008	**662**	***2530***	***2.81***	<0.01	**7.37**	**2360**	***3320***	***10200***	6.96	**525**
OCD #8A	09/15/2008	**515**	***3150***	***2.11***	<0.01	**10.6**	**2260**	***4130***	***10600***	6.98	**551**
OCD #8A	04/02/2009	**573**	***2700***	***2.84***	<0.150	**7.88**	**2220**	***3380***	**9550**		**499**
OCD #8A	09/22/2009	**645**	***2880***	***3.4***	<1.00	**9.25**	**2500**	***3840***	***10100***	6.98	**520**

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	Date	Calcium	Chloride	Fluoride	Nitrate/Nitrite as Nitrogen	Potassium	Sodium	Sulfate	Total Dissolved Solids	pH (pH units)	Total Alkalinity
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
RW #1	04/15/2005		260					2130			
RW #1	10/03/2006		97.2	2.34	<0.50	9.83	196	1690	3650	6.78	704
RW #1	12/28/2006	541	370	1.4	<0.50	4.88	301	1540	4010	6.79	759
RW #1	04/25/2007	270	466	1.25	<0.0880	3.4	355	760	2790	6.94	715
RW #1	04/09/2008	198	336	0.914	<0.01	1.39	278	701		6.65	769
RW #1	09/30/2008	252	266	0.85	<0.01	1.46	242	595	2330	6.72	781
RW #1	04/16/2009	300	312	0.573	<0.150	1.84	290	736	2670		820
RW #1	10/01/2009	218	324	0.597	<0.500	1.11	252	671	2510	6.67	742
RW #18	10/17/2006		251	2.54	1.09	1.22	307	3770	5770	7	283
RW #18	12/11/2006		253	2.53	0.823	1.01	275	3550	5860	7.04	295
RW #18	04/20/2007	499	257	2.28		0.85	281	3480	6030	7.32	299
RW #18	09/27/2007	402	258	<0.100	<0.100	0.859	229	3220	5510	6.94	316
RW #18	04/07/2008	420	261	2.31	<0.01	1.11	235	3400		6.89	321
RW #18	09/24/2008	530	283	1.95	<0.01	0.899	252	3190	5990	6.97	307
RW #18	04/07/2009	509	321	1.98	1.07	0.864	231	3140	5520		255
RW #18	09/29/2009	522	309	1.93	1.53	1.19	214	2920			296
TEL #1	04/08/2008	461	231	1.99	<0.01	1.14	308	1610		6.62	495
TEL #1	09/25/2008	494	147	2.75	<0.01	1.95	261	1850	3860	6.72	421
TEL #1	04/16/2009	214	249	1.96	<0.150	0.805	444	919	2590		582
TEL #1	09/25/2009	280	126	2.14	<1.00	0.881	430	507	2850	6.82	640
TEL #2	04/08/2008	149	378	0.746	<0.01	1.04	356	464		6.56	816
TEL #2	09/25/2008	239	380	0.897	<0.01	1.42	379	872	3290	6.56	931
TEL #2	04/16/2009	224	392	0.562	<0.150	1.19	384	825	3040		825
TEL #2	NS										
TEL #3	04/08/2008	582	263	2.46	<0.01	4.38	188	1560		6.36	526
TEL #3	04/16/2009	304	597	2.06	<0.150	3.92	325	580	2660		698
TEL #3	09/25/2009	611	34.2	2.93	<1.00	5.64	52.3	1520	3180	6.56	400
TEL #4	04/26/2007	268	533	1	<0.0880	0.469	324	1160	3520	6.79	781
TEL #4	09/28/2007	199	478	0.8	<0.100	0.478	250	494	2440	6.72	722
TEL #4	04/08/2008	201	435	0.614	<0.01	0.511	235	472		6.51	891
TEL #4	09/25/2008	231	375	0.787	<0.01	0.44	199	495	2180	6.55	729
TEL #4	04/16/2009	274	508	<0.250	<0.150	0.593	219	680	2570		689
TEL #4	09/25/2009	302	595	0.615	<1.00	0.547	263	844	3220	6.56	920
RA #313	10/02/2007		16.1	0.897	<0.100			427	901	7.47	203
RA #313	03/31/2008		28.4	0.843	<0.01			483	1030	7.31	193
RA #313	09/30/2008	180	16	0.775	<0.01	1.06	14.4	441	952	7.33	199
RA #314	10/02/2007		25.1	0.906	<0.100			450	948	7.29	187
RA #314	03/31/2008		469	0.691	<0.01			805	2320	7.09	200
RA #314	09/30/2008	175	24.7	0.778	<0.01	1.29	21.2	461	936	7.14	196

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009
Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

		Water Quality Parameters (mg/L, except for pH)									
Sample ID	**Date**	**Calcium**	**Chloride**	**Fluoride**	**Nitrate/Nitrite as Nitrogen**	**Potassium**	**Sodium**	**Sulfate**	**Total Dissolved Solids**	**pH (pH units)**	**Total Alkalinity**
			WQCC	WQCC	MCL			WQCC	WQCC	WQCC	
		-	2.50E+02	1.60E+00	1.00E+00	-	-	6.00E+02	1.00E+04	6 to 9	-
RA #3156	09/17/2007		***273***	**0.242**	***5.91***			***1540***	**2990**	6.71	**234**
RA #3156	03/31/2008		**233**	**0.136**	<0.01			***1570***	**3190**	7.33	**250**
RA #3156	09/30/2008	**522**	**235**	**0.181**	<0.01	**2.73**	**163**	***1540***	**3080**	6.77	**262**
RA #3156	04/16/2009	**454**	**218**	<0.250	***5.28***	**2.54**	**140**	***1490***	**2880**		**231**
RA #3156	09/30/2009	**433**	**231**	<0.500	***5.74***	**2.5**	**143**	***1520***	**3080**	6.92	**242**
RA #3353	10/02/2007		**197**	**0.158**	<0.100			***1140***	**2280**	7.41	**152**
RA #4196	10/02/2007		**179**	**0.269**	<0.100			***1180***	**2450**	7.16	**244**
RA #4196	03/31/2008		***677***	**0.486**	<0.01			***1280***	**3460**	7.06	**198**
RA #4196	09/30/2008	**394**	***268***	**0.2**	<0.01	**2.34**	**146**	***1190***	**2510**	7.09	**219**
RA #4196	04/16/2009	**377**	***875***	<0.250	<0.150	**2.89**	**419**	***1230***	**3370**		**157**
RA #4196	09/30/2009	**425**	***329***	<0.500	<0.500	**2.39**	**158**	***1280***	**2770**	7.11	**197**
RA #4798	10/02/2007		**133**	**0.287**	<0.100			***1230***	**2410**	7.01	**246**
RA #4798	03/31/2008		**77.4**	**0.293**	<0.01			***875***	**1700**	7.05	**173**
RA #4798	03/31/2008										
RA #4798	09/30/2008	**298**	**84.8**	**0.23**	<0.01	**2.23**	**58.4**	***876***	**1720**	6.98	**182**
RA #4798	04/16/2009	**238**	**70**	<0.250	<0.150	**2.02**	**44.7**	***768***	**1460**		**128**
RA #4798	09/30/2009	**457**	**165**	<0.500	**0.758**	**2.34**	**127**	***1560***	**3000**	6.94	**286**
La Rue Well	09/17/2007		**120**	**0.349**	***7.81***			***1450***	**2580**	6.78	**250**
La Rue Well	03/31/2008		**126**	**0.249**	<0.01			***1540***	**2920**	7.16	**279**
La Rue Well	09/30/2008	**394**	**116**	**0.333**	<0.01	**1.71**	**104**	***1430***	**2750**	6.83	**280**
La Rue Well	04/16/2009	**423**	**116**	<0.250	***7.85***	**1.66**	**104**	***1440***	**2690**		**245**
La Rue Well	09/30/2009	**408**	**117**	**0.382**	***7.7***	**1.65**	**110**	***1450***	**2770**	6.92	**256**
UG #1	08/06/2008	**540**	**183**	**0.71**	<0.01	**1.8**	**75.2**	***1710***	**3490**	6.9	
UG #1	04/09/2009	**907**	**177**	<0.250	***5.54***	**7.06**	**70.5**	***1900***	**3410**		**1330**
UG #1	10/02/2009	**487**	**166**	**0.691**	***7.21***	**2.07**	**65.4**	***1810***	**3450**	6.99	**252**
UG #2	08/06/2008	**642**	**77.4**	**1.42**	<0.01	**7.32**	**89.6**	***963***	**2110**	7.39	
UG #2	04/09/2009	**374**	**62.1**	**1.25**	***1.7***	**4.61**	**75.9**	***1010***	**1940**		**120**
UG #2	10/02/2009	**284**	**53**	**1.3**	***2.56***	**4.04**	**67**	***961***	**1900**	7.1	**247**
UG #3R	04/09/2009	**434**	**62.9**	<0.250	***4.96***	**4.06**	**63.3**	***1390***	**2590**		**379**
UG #3R	10/02/2009	**451**	**68**	**0.565**	***5.38***	**3.47**	**59.6**	***1330***	**2520**	6.86	**208**

Table A-1
Summary of Groundwater Monitoring Program Analytical Results
2006 through 2009

Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Table A-1 Footnotes and Definitions

Explanation of data presentation

0.33	Concentration shown exceeds the groundwater screening level
<10	Result reported as not detected at method detection limit shown, but method detection limit exceeds the groundwater screening level.
<10	Result reported as not detected at method detection limit shown.
	Blank cells indicate that the compound was not analyzed for this sample.

Abbreviations:

DRO = Diesel Range Organics
GRO = Gasoline Range Organics
mg/L = Milligrams per liter
µg/L = Micrograms per liter

Groundwater Screening Level Sources:

" - " = No standard available
EPA TW = Tap Water standard from EPA Regional Screening Levels
MCL = Maximum Contaminant Level from the National Primary Drinking Water Standards
NMED TPH = New Mexico Environment Department Total Petroleum Hydrocarbon Standards, October 2006
NMED TW = New Mexico Environment Department Tap Water Standard, August 2009 (from Soil Screening Level guidance document)
WQCC = Water Quality Control Commission; standard for groundwater from NMAC 20.6.2.3103

Daily Log Sheet

Date _____

This sheet shall document observations and field activities not otherwise reported on well sampling forms

Date _____

Navajo Refinery Monitor Well Sampling Form

Project #: NAV-06-003 **Well ID.:**_____

Date: _____ Time on location: _____

Samplers:_____ Time off location: _____

Measuring Point: _____ Low Flow or pump: _____

Measured Well Depth (W_1):_____ Height of water column (H_1=W_1-W_2):_____

Sample Date Depth to Water: (W_2):_____ Well Diameter: _____

* Low flow: New pump tubing each location. Tubing length in well: Height water column $H_1/2 + W_2$. Run 15 minutes minimum. Sample when specific conductance, temperature, DO and turbidity are within 10% of previous reading and pH is within 0.5 pH units.

For 2" wells: One casing volume = 0.163 x H_1 = _____ gallons; 3 casing volumes = _____ gallons
For 4" wells: One casing volume = 0.653 x H_1 = _____ gallons; 3 casing volumes = _____ gallons
For 6" wells: One casing volume = 1.469 x H_1 = _____ gallons; 3 casing volumes = _____ gallons
(Hint: An acceptable short cut:
For 2" wells, take the height of the water column and divide by 2 for three casing volumes.
For 4" wells, take the height of the water column and multiply by 2 for three casing volumes.)
* Sub. Pump: A minimum of 3 casing volumes will be removed prior to sampling unless the well can be bailed/ pumped dry. Sampling should begin after the water level has recovered to at least 75% of its original level.
* Both methods: Measurements of pH, specific conductance, temperature, dissolved oxygen, and ORP will be recorded for each one-half casing volume removed. Should pH, specific conductance, temperature not stabilize; additional casing volumes to a maximum of ten will be removed during purging.

Sample for VOCs(3)___Metals(1)____GRO(3)____DRO(2)____SVOC(2)____Cation/Anions/TDS/NO_3(3)__

Note - For Cation/Anions/TDS/NO_3 check these boxes: Anions/Alk, Cations, TDS, Nitrate/Nitrite

Purging and Sampling Record: To Purge: _____ gallons

No. Gallons	pH (SU)	Cond [units] (_____)	Turb (ntu)	DO (mg/L)	Temp (°C)	ORP (mv)	LF Depth to Water (ft.)

Notes:

Taken at this location: Equipment Blank: _____ Field Blank: _____

Sample Time: