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REPORTS

RCRA Group 9 (SWMU12 API Separator, 13 Process Area, 14 Tanks 3-5 & 27 WW Collection System) (1)

February 2015

INVESTIGATION REPORT

GROUP 9 (SWMU No. 12 API Separator, SWMU No. 13 Process Area and SWMU No. 14 Tanks 3, 4 and 5) and SWMU No. 27 Wastewater Collection System)



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

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List of Acronyms

American Petroleum Institute (API)

areas of concern (AOCs)

below ground level (bgl)

benzene, toluene, ethylbenzene, and xylene (BTEX)

Code of Federal Regulations (CFR)

diesel range organics (DRO)

dilution/attenuation factor (DAF)

Environmental Protection Agency (EPA)

hazard index (HI)

hollow-stem auger (HSA)

investigation derived waste (IDW)

liquefied petroleum gas (LPG)

Massachusetts Department of Environmental Protection (MADEP)

maximum contaminant level (MCL)

monitoring well (MW)

motor oil range organics (MRO)

New Mexico Administrative Code (NMAC)

New Mexico Environment Department (NMED)

New Mexico Statues Annotated (NMSA)

photoionization detector (PID)

polyvinyl chloride (PVC)

RCRA Facility Investigation (RFI)

Resource Conservation and Recovery Act (RCRA)

Separate-phase hydrocarbon (SPH)

Semi-volatile organic constituent (SVOC)

Solid Waste Management Units (SWMUs)

total petroleum hydrocarbon (TPH)

toxicity characteristic leaching procedure (TCLP)

unified soil classification system (USCS)

volatile organic constituent (VOC)

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Executive Summary

The Bloomfield Refinery, which is located in the Four Corners Area of New Mexico, began operation in the late 1950s. Petroleum refining operations ceased in November 2009 and the property continues to be used as a petroleum terminal. Past inspections by State and federal environmental inspectors have identified locations where releases to the environment may have occurred. These locations are generally referred to as Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs).

Pursuant to the terms and conditions of an Order issued on July 27, 2007 by the New Mexico Environment Department (NMED) to San Juan Refining Company, as owner, and Giant Industries Arizona, Inc., as operator, for the Bloomfield Refinery, this environmental site investigation was completed for the SWMUs designated as Group 9 and SWMU No. 27 Wastewater Collection System. Group 9 includes SWMU No. 12 (API Separator), SWMU No. 13 (Process Area) and SWMU No. 14 (Tanks 3, 4, and 5). A Class I modification to the facility's Resource Conservation and Recovery Act (RCRA) permit was approved on June 10, 2008 to reflect the name change of the operator of the refinery to Western Refining Southwest, Inc. – Bloomfield Refinery. The name of the owner of the refinery remained the same – San Juan Refining Company.

The Order requires that San Juan Refining Company and Giant Industries Arizona, Inc. determine and evaluate the presence, nature, and extent of historical releases of contaminants at the aforementioned SWMUs. The investigation activities included collection and analysis of soil and groundwater samples for potential site-related constituents beginning on September 15, 2014 and continuing through December 16, 2014. The samples were collected from three soil borings near SWMU No. 12; eighteen soil borings, eleven surface soil locations, and seven monitoring wells at SWMU No. 13 and SWMU No. 27; and five soil borings at SWMU No. 14. The borings/wells were completed using hollow-stem augers. A total of 110 soil samples and nine groundwater samples (excluding additional quality assurance samples) were collected for analysis of potential site-related constituents (e.g., volatile and semi-volatile organics, total petroleum hydrocarbons, and metals, including chromium VI and tetraethyl lead).

Four metals (arsenic, cobalt, mercury, and cyanide) and ten organic constituents (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, benzene chloroform, ethylbenzene, naphthalene, toluene, and xylenes) were detected at concentrations in soil samples above their respective screening levels. Diesel range organics and motor oil range organics were also detected in soil samples at concentrations above their respective screening levels. Of the 110 soil samples collected, 79 soil samples have concentrations exceeding screening levels that were developed to protect against leachate migrating to groundwater and only 36 soil samples have concentrations above the residential direct contact screening levels. Of the 79 samples with concentrations above screening levels developed to protect groundwater, 29 of these samples were collected from deep intervals that may be impacted by contaminated groundwater and thus not represent a potential threat to groundwater. Of the 36 soil samples with concentrations above the residential direct contact screening levels, 10 of these samples were collected from deeper intervals potentially affected by impacted groundwater.

Groundwater samples were collected from all seven new monitoring wells, although two wells contain separate-phase hydrocarbon (SPH) and these analyses are only qualitative. Five metals (arsenic, barium, iron, lead, and manganese) and thirteen organic constituents (1,2,4-trimethylbenzene, 1,2-dichloroethane, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, aniline, benzene, ethylbenzene, methyl tert-butyl ether, naphthalene, toluene, xylenes, and bis(2-ethylhexyl) phthalate) were detected in groundwater samples collected from wells without SPH at concentrations above the screening levels. Chloride and total dissolved solids were also found at concentrations exceeding screening levels; however, the reported concentrations should be evaluated against naturally occurring concentrations prior to making final determinations regarding the occurrence of these constituents.

Section 1 Project Information

The Bloomfield Refinery, which is currently operated as a petroleum terminal, is located immediately south of Bloomfield, New Mexico in San Juan County (Figure 1). The physical address is #50 County Road 4990, Bloomfield, New Mexico 87413. The Bloomfield Refinery is located on approximately 263 acres. Bordering the facility is a combination of federal and private properties. Public property managed by the Bureau of Land Management lies to the south. The majority of undeveloped land in the vicinity of the facility is used extensively for oil and gas production and, in some instances, grazing. U.S. Highway 550 is located approximately one-half mile west of the facility. The topography of the main portion of the site is generally flat with steep bluffs to the north where the San Juan River intersects Tertiary terrace deposits.

The Bloomfield Refinery is currently owned by San Juan Refining Company, a New Mexico corporation, and operated by Western Refining Southwest, Inc. formerly known as Giant Industries Arizona, Inc., an Arizona corporation. The Bloomfield Refinery had an approximate refining capacity of 18,000 barrels per day before petroleum refining operations ceased in November 2009. The facility is currently operated as a petroleum terminal. Various process units operated at the facility, included crude distillation, reforming, fluidized catalytic cracking, sulfur recovery, merox treater, catalytic polymerization, and diesel hydrotreating. Products produced at the refinery included gasoline, diesel fuels, jet fuels, kerosene, propane, butane, naphtha, residual fuel, fuel oils, and liquefied petroleum gas (LPG).

On July 27, 2007, the New Mexico Environment Department (NMED) issued an Order to San Juan Refining Company and Giant Industries Arizona, Inc. ("Western") requiring investigation and corrective action at the Bloomfield Refinery. This Investigation Report has been prepared for the Solid Waste Management Units (SWMUs) designated as Group 9 in the Order and SWMU No. 27. Group 9 includes SWMU No. 12 (API Separator), SWMU No. 13 (Process Area) and SWMU No. 14 (Tanks 3, 4, and 5). The Wastewater Collection System, which is located primarily within the Process Area, is designated as SWMU No. 27. The area investigated also includes some limited runs of underground piping (SWMU No. 3) in and near the Process Area. The data collected nearby for SWMU No. 3 was originally presented in the Group 8 Investigation Report, but is also included with

the Group 9 data due to its proximity to the Group 9 SWMUs. The location of the SWMUs is shown on Figure 2. Photographs are included for these two SWMUs in Appendix A.

The purpose of the site investigation is to determine and evaluate the presence, nature, and extent of releases of contaminants in accordance with 20.4.1.500 New Mexico Administrative Code (NMAC) incorporating 40 Code of Federal Regulations (CFR) Section 264.101. The investigation activities were conducted in accordance with Section IV of the Order and the investigation was completed pursuant to the Investigation Work Plan dated March 2012, which was approved by the NMED on April 30, 2013. Any variances from the approved Investigation Work Plan are explained in Section 3.0.

The samples of soil and groundwater were analyzed for volatile and semi-volatile organic constituents, petroleum hydrocarbons [gasoline range organics (GRO), diesel range organics (DRO), motor oil range organics (MRO)], metals, and cyanide. In addition, groundwater samples were analyzed for general water quality parameters. The results of these analyses are compared to applicable State or federal cleanup and screening levels as specified in Section VII of the Order and as directed by NMED.

Section 2 Background

This section presents background information for Group 9 and SWMU No. 27, including a review of historical waste management activities for each location to identity the following:

- Type and characteristics of waste and contaminants handled in the subject SWMUs;
- Known and possible sources of impacts;
- History of releases; and
- Known extent of impacts prior to the current investigation.

SWMU No. 3 Underground Piping Currently in Use

The terminal operations still include most of the same or similar transfer and storage operations of refined products, crude oil, and wastewater as conducted when refining operations were being conducted. Figure 2 shows a segment of active underground piping (SWMU No. 3), which runs along the northern boundary of SWMU No. 13 (Process Area) and the southern boundary of SWMU No. 14 (Tanks 3, 4, and 5), and second very short segment near the southwest corner of SWMU No. 12 (API Separator). The information for this area, which was originally presented in the Group 8 Investigation Report, is also included with the Group 9 SWMUs. SWMU No. 3 is not discussed separately in some of the subsequent sections of this work plan, as it is considered to be located within the area cover by SWMUs 13 and 14. The pipeline, which runs along the north side of SWMU No. 13, transfers recovered groundwater from Tank 37 (French drain recovery tank) to the northeast corner of the Diesel Hydrotreater Unit where it discharges into SWMU No. 27 (Wastewater Collection System), which in turns flows to SWMU No. 12 (API Separator).

The pipeline consists of 4 inch steel and PVC and it was most recently hydrotested for potential leaks in July 2010. The pipeline passed the test without any indication of leaks. There are no documented historical releases from the pipeline. Groundwater conditions in area have been previously investigated and two nearby recovery wells (RW-22 and RW-28) are currently in operation to recovery historical impacts from unidentified sources. Historical groundwater analyses from nearby monitoring and recovery wells are included in Table 1.

SWMU No. 12 - API Separator

The API Separator is located immediately south of the aeration lagoons and at the southeast corner of the process units (Figure 2). The separator is an in-ground concrete structure that was placed into service before 1989. The Wastewater Collection System (SWMU No. 27) and additional wastewater pipelines enter the API Separator on the western end and water discharges from the east end of the API Separator where it flows through the benzene strippers before discharging to the aeration basins. The API separator relies upon gravity separation (i.e., the specific gravity difference between the oil and the wastewater). The difference in specific gravity between oil and the wastewater is much smaller than the specific gravity difference between the suspended solids and water. Therefore, most of the suspended solids will settle to the bottom of the separator as a sediment layer, the oil will rise to the top of the separator, and the wastewater will be the middle layer between the oil on top and the solids on the bottom. The oil layer is skimmed off and recovered for reprocessing. The sediment layer is removed annually and managed in accordance with Hazardous Waste Regulations.

There have not been any documented historical releases from the API Separator. No previous investigations of soils have been conducted in the immediate area of the API Separator. Historical impacts to groundwater in the general area have been documented since the 1990s (Groundwater Technology Inc., 1994). Historical analyses from nearby recovery, monitoring, and observation wells are provided in Table 1.

SWMU No. 13 - Process Area

The Process Area is located in the northwestern portion of the refinery property, immediately west of the aeration lagoons (Figure 2). The process units have been located in the same area since the refinery was first started in the 1950s, with additional units added over time. There were a number of different processing units located in this area and a short description of each follows.

The Crude Unit had a design capacity of 16,800 barrels per day. The crude unit is the initial stage in the refining process. In the Crude Unit, raw crude oil is converted into straight run gasoline, kerosene, diesel, reduced crude, naphtha, and liquefied petroleum gases (LPGs) in a distillation process. The hydrocarbon materials entered and exited the Crude Unit through aboveground piping.

The Fluid Catalytic Cracker (FCC) Unit utilized a stacked type of Universal Oil Products (UOP) regenerator technology. Reduced crude from the crude unit was used to feed the FCC unit. The feed

was heated via an exchanger and mixed with recycle (fractionation tower bottoms) and side cut heavy gas oil. This combination was then mixed with hot regenerated catalyst and it was vaporized in the riser entering the bottom of the reactor. As the vapor rose in the reactor, cracking took place with carbon deposited on the catalyst. Spent catalyst left the reactor through a steam stripping leg and flowed to the regenerator where air was blown in and carbon was burned off reactivating the catalysts. Cracked products left the reactor and went to the fractionators via aboveground piping where they were separated into gas, LPG, gasoline, light gas, and heavy gas oil. Zeolite, bauxite, silica-alumina, and aluminum hydrosilica are all catalysts commonly used in an FCCU unit. Although catalyst was regenerated within the unit, excess spent catalyst was periodically (e.g., a few times each year) removed from the unit and either placed in the former on-site landfill (SWMU No. 16) or disposed off-site at a permitted landfill. Handling of the catalyst took place on the south side of the FCC unit.

The FCC Gas Concentration Unit fractionated the product from the FCC reactor into fuel gas, cat gas (which is a gasoline blendstock), LCO (which was blended with diesel), and #6 burner fuel.

Propylenes and butlylenes were also recovered from fuel gas. No catalysts or other none petroleum hydrocarbon materials were added to the process within the FCC Gas Con. Unit.

An Electrostatic Precipitator was used to remove fine particles from the various air streams. For example, FCC catalyst fines (broken catalyst particles) in the air stream from the regenerator were directed via aboveground piping to the electrostatic precipitator. At the precipitator, particulate air flowed between electrically charged plates that attract the fine particles in the gas due to static electricity. The charge on the plates cycle, thus allowing the particles to fall into hoppers at the bottom of the precipitator. The fines collected in the hoppers were either sent off-site for disposal, or were disposed of at the on-site landfill (SWMU No. 16).

The Catalytic Reformer Unit is a UOP semi-regenerative design that produced high octane (94-95) motor fuel (platformate) from naphtha. Catalytic reforming employs a series of reactions conducted over a platinum or platinum/rhenium catalyst to change or reform the structure of hydrocarbons. The naphtha charge is heated and passed through a series of reactors containing platinum/rhenium to produce a high octane gasoline called reformate and platformate which are used in gasoline blending. The naphtha feed, reformate and platformate were piped to and from the Reformer Unit in aboveground piping. The reactors went through a regeneration cycle about every eighteen months where hot gas was used to burn off carbon deposited on the catalyst to reactivate it. The organic material was completely consumed in the regeneration process.

Catalytic polymerization occurred at the Cat Poly Unit, where olefins (e.g., propylene and butylenes) were converted into high octane polymers. Olefins from the gas concentration section of the FCC Unit that were caustic were routed to the Cat Poly reactors, which contain phosphoric catalysts. The phosphoric catalyst removed the impurities of the feed material. The only external handling of materials that occurred at the Cat Poly Unit was exchange of the phosphoric catalyst, which occurred approximately every six months at the southwest corner of the unit.

There were four treating units within Treater Unit #300; Merox LPG, saturate LPG, JP-4, and sour water stripper. All of these units performed the same function; removal of hydrogen sulfides and impurities from products by using sodium hydroxide. All piping was aboveground.

The SulFerox® Unit was used to remove hydrogen sulfide from various gas streams. SulFerox® is a redox process where H_2S is oxidized to elemental sulfur while ferric ions are reduced. The primary materials handling activity is the removal of elemental sulfur from the sulfur press. The elemental sulfur was historically placed in an on-site landfill. A diesel hydrotreater was also located in the same area and was used to reduce the sulfur content of diesel fuel to meet on-road transportation fuel requirements.

The primary types of wastes and/or contaminants handled in the various process units included primarily petroleum hydrocarbons and catalysts used in the various reaction processes, as discussed above. In addition, compounds used as a source of chlorine ions (e.g., tetrachloroethene) were used in limited quantities at the Catalytic Reformer Unit. Tetraethyl lead was used as an octane booster until the late 1980s.

There is only one documented spill within the Process Area and this occurred in 1986. A new 6" diesel line was installed in the low pipe rack just east of the Crude Unit, but two flanges were not adequately tightened and the line leaked when first placed into service. Approximately 150 barrels of diesel were release and 50 barrels were recovered. Other smaller undocumented spills may have occurred over time but most of the units are built over a concrete floor with containment berms. There are drains within the units to collect any smaller spills and the drains are part of SWMU No. 27 (Wastewater Collection System), which is discussed below.

No prior investigations of soil conditions have been conducted in the Process Area; however, previous investigations have identified and delineated impacts to groundwater from historical site operations (Groundwater Technology Inc., 1994). The earliest known well in the area was RW-18,

which was installed in the eastern portion of the process area in August 1990. Additional wells present in the area include recovery wells RW-28 and RW-24, monitoring wells MW-41, MW-55, and MW-58, and collection and observation wells along the slurry wall that is present just northwest of the process area. Historical analyses of groundwater samples collected from the area are presented in Table 1. Figure 3 shows the distribution of separate- phase hydrocarbon (SPH) in the subsurface based on the apparent thickness of SPH measured in monitoring wells. Most of the process area is shown to be present over a plume of measureable SPH. Dissolved-phase impacts are depicted on Figure 4.

SWMU No. 14 - Tanks 3, 4, and 5

These three product storage tanks are located immediately north of the Process Area (Figure 2). Each of the tanks has a storage capacity of 10,000 barrels. The tanks have been used to store reformate, jet fuel (JP-4 and Jet-A), and unleaded gasoline. There have been two documented spills at the tanks as follows:

- On February 4, 1993 an estimated 45 barrels of reformate were released as the result of overfilling Tank #5. Forty three barrels were recovered, resulting in an estimated loss of only two barrels; and
- On March 3, 2000 an estimated 550 barrels of reformate were released as the result of overfilling Tank #5. Five hundred barrels were recovered with an estimated loss of 50 barrels.

While there have not been any documented soils investigations in the area of the tanks, groundwater impacts were documented as early as 1986 with the installation of RW-9 just north of Tank #5. Additional recovery wells RW-22 and RW-23 were added in July 1993. Other wells in the area include MW-39 and MW-55, and collection and observation wells along the slurry wall to the west, north, and northeast. Figure 3 shows the distribution of SPH in the subsurface based on the apparent thickness of SPH measured in monitoring wells. Measureable SPH is present in wells just south of the Tanks in the process area but has not been present in wells nearest the Tanks in recent monitoring events. Dissolved-phase impacts are depicted on Figure 4.

SWMU No. 27 - Wastewater Collection System

The Wastewater Collection System is present throughout the Process Area. It includes a series of drains placed in the concrete floors within the various process units and sumps also located

throughout the process area. The collection system flows to the immediately adjacent API Separator. As the Wastewater Collection System is located within the process area, the type and characteristics of all waste and all potential contaminants handled in the Wastewater Collection System, the known and possible sources of contamination, and known extent of contamination is the same as that discussed above for SWMU No. 13 (Process Area). There are no documented historical releases from the wastewater collection system.

Section 3 Scope of Activities

3.1 Soil Boring Installation and Sample Collection

Pursuant to Section IV of the Order and the approved Group 9 and SWMU No. 27 Investigation Work Plan, an investigation of soils and groundwater was conducted to determine and evaluate the presence, nature, extent, fate, and transport of contaminants. To accomplish this objective, twenty two soil borings were proposed within SWMUs No. 12, 13, 14, and 27, and a small portion of SWMU No. 3, of which five were to be completed as permanent monitoring wells (Figure 2). All of these soil borings were drilled to the water table and the five borings scheduled to be completed as permanent monitoring wells were extended to the top of the Nacimiento Formation pursuant to the Investigation Work Plan. In addition, eleven surface soil sample locations were completed throughout SWMUs No. 13 and No. 27.

After the Investigation Work Plan was approved by NMED on April 30, 2013, the Crude Unit, FCC Unit, Poly Unit, and FCC Gas Conn. Unit were removed from the site. This allowed additional access for sample collection and five additional locations for soil borings were selected by Western. These locations are included on Figure 2 and soil borings were completed at four of the five locations, as a boring could not be installed at one of the additional locations. Extensive concrete in the area of boring SWMU 13-9 prevented sample collection at this one "additional" location. Based on field observations, Western also elected to complete two more of the soil borings as permanent wells (SWMU 13-5 as MW-74 and SWMU 13-13 as MW-76) for a total of seven monitoring wells. Due to obstructions in the field four locations were moved. SWMU 13-8 was moved approximately 20 feet to the northeast, SWMU 13-13 (MW-76) was moved approximately 50 feet to the southeast, SWMU 13-15 (MW-75) was moved approximately 30 feet to the west, and SWMU 13-17 was shifted approximately 10 feet to the west (Figure 2). Due to the potential to encounter underground utilities, most drilling locations were cleared using hydroexcavation. Some borings were shifted a few feet, as necessary, to avoid underground utilities.

A description of the locations and sample collection intervals for each of the borings/wells is presented below:

- <u>SWMU 12-1</u> This boring is located south of the API Separator and adjacent to underground hydrocarbon pipelines and underground wastewater piping. The boring was advanced to a depth of 28 feet below ground level (bgl). Three soil samples were collected from 0.5 feet 2 feet, 4 feet 6 feet, and 24 feet 26 feet.
- <u>SWMU 12-2</u> This boring is located immediately adjacent to the API Separator. The boring was advanced to a depth of 30 feet bgl. Four soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet, 6 feet 8 feet, and 22 feet 24 feet.
- <u>SWMU 12-3</u> This boring is located to the northwest of the API Separator. The boring was advanced to a depth of 30 feet bgl. Six soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet with duplicate, 2 feet 4 feet, 22 feet 24 feet, and 26 feet 28 feet.
- SWMU 13-1 This boring is located adjacent to Treatment Unit #300 on the north end of the Process Area. The boring was advanced to a depth of 28 feet bgl. Three soil samples were collected from 0.5 feet – 2 feet, 12 feet – 14 feet and 26 feet - 28 feet.
- <u>SWMU 13-2</u> This boring is located adjacent to the SulFerox® unit near the north end of the Process Area. The boring was advanced to a depth of 28 feet bgl. Three soil samples were collected from 0.5 feet to 2 feet, 24 feet – 26 feet and 26 feet – 28 feet.
- <u>SWMU 13-3</u> This boring is located adjacent to the SulFerox® unit on the east side of the Process Area. The boring was advanced to a depth of 28 feet bgl. Three soil samples were collected from 0.5 feet – 2 feet, 4 feet – 6 feet and 26 feet – 28 feet.
- <u>SWMU 13-4</u> This boring is located adjacent to the sulfur press. The boring was advanced to a depth of 35.5 feet bgl. Three soil samples were collected from the following intervals; 0.5 feet 2 feet, 6 feet 8 feet, and 24 feet 26 feet.
- <u>SWMU 13-5 (MW-74)</u> This boring is located on the west side of the Poly Unit and south of the sulfur press. The boring was advanced to a depth of 32 feet bgl. Four soil samples were collected from the following intervals; 0.5 feet 2 feet, 4 feet 6 feet, 10 feet 12 feet, and 24 feet 26 feet. The boring was completed as a permanent 4-inch well.
- <u>SWMU 13-6</u> This boring is one of the additional borings added after the approval of the Investigation Work Plan and is located on the northeast corner of the precipitator. The boring was advanced to a depth of 28 feet bgl. Three soil samples were collected from 0.5 feet 2 feet, 10 feet 12 feet bgl and 24 feet 26 feet bgl.

- SWMU 13-7 This boring is one of the additional borings added after the approval of the Investigation Work Plan and is located on the southwest corner of the FCC Unit. The boring was advanced to a depth of 26 feet bgl. Five soil samples were collected from 0 0.5 feet, 0.5 feet 2 feet, 2 feet 4 feet, 14 feet 16 feet, and 22 feet 24 feet bgl.
- SWMU 13-8 This boring is located on the north side of the FCC Unit. The boring was advanced to a depth of 28 feet bgl. Five soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet (including duplicate), 22 feet 24 feet, and 24 feet 26 feet bgl.
- SWMU 13-9 This boring is one of the additional borings added after the approval of the
 Investigation Work Plan and it is located immediately adjacent to the Gascon Unit, on the west
 site. However, extensive concrete in this area prevented the ability to penetrate the subsurface
 and no soil samples were collected from this location.
- <u>SWMU 13-10</u> This boring is one of the additional borings added after the approval of the Investigation Work Plan and it is located off the northwest corner of the Gascon Unit. The boring was advanced to a depth of 30 feet bgl. Four soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet, 24 feet 26 feet, and 26 feet 28 feet bgl.
- SWMU 13-11 This boring is located on the north side of the Crude Unit. The boring was advanced to a depth of 30 feet bgl. Three soil samples were collected from 0 feet 0.5 feet,
 0.5 feet 2 feet and 26 28 feet bgl.
- SWMU 13-12 This boring one of the additional borings added after the approval of the Investigation Work Plan and is located near the boilers. The boring was advanced to a depth of 28 feet bgl. Four soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet, 16 feet 18 feet, and 24 feet 26 feet bgl.
- SWMU 13-13 (MW-76) This boring is located adjacent to an active hydrocarbon pipeline. The bottom of the line is at 4 feet bgl. The boring was advanced to a depth of 32 feet bgl. Four soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet, 10 feet 12 feet, and 24 feet 26 feet bgl. This location was originally scheduled as only a soil boring, but Western elected to complete it as a permanent 4-inch well.
- SWMU 13-14 This boring is located on the northwest corner of the main air blower. The boring was advanced to a depth of 30 feet bgl. Three soil samples were collected from 0.5 feet
 2 feet, 2 feet 4 feet and 26 feet 28 feet bgl.

- SWMU 13-15 (MW-75) This boring is located near the southwest corner of the tetraethyl lead building. The boring was advanced to a depth of 30 feet bgl. Five soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet, 12 feet 14 feet, 14 feet 16 feet, and 24 feet 26 feet bgl. The boring was completed as a permanent 2-inch monitoring well.
- SWMU 13-16 (MW-72) This boring is located within FCC Unit. The boring was advanced to a depth of 30 feet bgl. Four soil samples were collected the following intervals; 0 feet 0.5 feet, 0.5 2 feet, 18 feet 20 feet, and 26 feet 28 feet. The soil boring was completed as a permanent 4-inch well.
- <u>SWMU 13-17 (MW-73)</u> This boring is located near the northeast corner of the Gascon Unit.
 The boring was advanced to a depth of 35 feet bgl. Four soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet, 6 feet 8 feet, and 24 26 feet bgl. The soil boring was completed as a permanent 4-inch well.
- SWMU 13-18 (MW-71) This boring is located adjacent to the cooling towers. The boring was advanced to a depth of 35.5 feet bgl. Five soil samples were collected from 0 feet 0.5 feet,
 0.5 feet 2 feet, 12 feet 14 feet, 22 feet 24 feet, and 24 feet 26 feet bgl. The soil boring was completed as a permanent 2-inch well.
- <u>SWMU 13-19 (MW-77)</u> This boring is located adjacent to new cooling towers on the west end of the Process Area. The boring was advanced to a depth of 33 feet bgl. Three soil samples were collected from 0.5 feet 2 feet, 12 feet 14 feet and 26 feet 28 feet bgl. The soil boring was completed as a permanent 4-inch well.
- <u>SWMU 13-20</u> This surface soil sample location is on the west side of the Reformer Unit near where chlorinated solvents were stored. A surface soil sample was collected from 0 feet – 0.5 feet bgl.
- <u>SWMU 13-21</u> This surface soil sample location is on the east side of the Reformer Unit near where catalysts were handled. A surface soil sample was collected from 0 feet – 0.5 feet bgl.
- <u>SWMU 13-22</u> This surface soil sample location is on the east side of the Reformer Unit near
 where catalysts were handled. A surface soil sample was collected from 0 feet 0.5 feet bgl.
- <u>SWMU 13-23</u> This surface soil sample location is adjacent to the sulfur press. A surface soil sample was collected from 0 feet 0.5 feet bgl.

- <u>SWMU 13-24</u> This surface soil sample location is adjacent to the sulfur press. A surface soil sample was collected from 0 feet 0.5 feet bgl.
- <u>SWMU 13-25</u> This surface soil sample location is near the southwest corner of the Poly Unit, where catalysts were handled. A surface soil sample was collected from 0 feet 0.5 feet bgl.
- <u>SWMU 13-26</u> This surface soil sample location is near the southwest corner of the Poly Unit,
 where catalysts were handled. A surface soil sample was collected from 0 feet 0.5 feet bgl.
- <u>SWMU 13-27</u> This surface soil sample location is near the precipitator, where materials (e.g., fines) were handled. A surface soil sample and duplicate was collected from 0 feet 0.5 feet bgl.
- <u>SWMU 13-28</u> This surface soil sample location is near the precipitator, where materials (e.g., fines) were handled. A surface soil sample was collected from 0 feet 0.5 feet bgl.
- <u>SWMU 13-29</u> This surface soil sample location is near the precipitator, where materials (e.g., fines) were handled. A surface soil sample was collected from 0 feet 0.5 feet bgl.
- <u>SWMU 13-30</u> This surface soil sample location is near the tetraethyl lead building. A surface soil sample was collected from 0 feet 0.5 feet bgl.
- <u>SWMU 14-1</u> This boring is located on the east side of Tank No. 5, within the containment area. The boring was advanced to a depth of 22 feet bgl. Four soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet, 8 feet 10 feet, and 18 feet 20 feet.
- <u>SWMU 14-2</u> This boring is located between Tanks No. 4 and No. 5. The boring was advanced to a depth of 22 feet bgl. Four soil samples were collected from 0 feet 0.5 feet, 0.5 feet to 2 feet, 18 feet to 20 feet, and 20 feet to 22 feet bgl.
- SWMU 14-3 This boring is located within the containment area to the north of Tanks No. 3,
 No. 4 and No. 5. The boring was advanced to a depth of 20 feet bgl. Five soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet with duplicate, 4 feet 6 feet, and 14 feet 16 feet.
- <u>SWMU 14-4</u> This boring is located adjacent to the flare. The boring was advanced to a depth of 22 feet bgl. Four soil samples were collected from 0 feet 0.5 feet, 0.5 feet 2 feet, 6 feet 8 feet, and 18 feet 20 feet.

• <u>SWMU 14-5</u> – This boring is located outside the containment area, to the west of Tank No. 3. The boring was advanced to a depth of 30 feet bgl. Four soil samples were collected from the following intervals; 0 feet - 0.5 feet, 0.5 feet - 2 feet, 16 feet - 8 feet, and 26 feet - 28 feet.

3.2 Background Information Research

Documents containing the results of previous investigations and subsequent routine groundwater monitoring data from monitoring wells were reviewed to facilitate development of the Group 9 Investigation Work Plan (Groundwater Technology, Inc. 1994 and Western Refining Southwest, Inc., 2010). The previously collected data provide detailed information on the overall subsurface conditions, including hydrogeology and contaminant distribution within groundwater on a site-wide basis. The data collected under this scope of services supplements the existing groundwater information and provides SWMU-specific information regarding contaminant occurrence and distribution within soils.

3.3 Collection and Management of Investigation Derived Waste

Soil cuttings (i.e., excess sample material) and soils generated during hydroexcavation of sampling locations were contained and characterized using methods based on the type of contaminants suspected or encountered. Discrete soil samples were collected for waste characterization using a decontaminated stainless-steel spoon. Additional discussion on management of investigation derived waste (IDW) is presented in Appendix B. The soil samples were analyzed for leachable RCRA 8 Metals, VOCs, and SVOCs using the toxicity characteristic leaching procedure (TCLP). The laboratory reports are included at the back of Appendix F. The soils were determined to be non-hazardous and approximately 60 cubic yards were disposed off-site at the Envirotech landfarm.

All decontamination water (approximately 40 gallons total) was disposed at the end of each day in the refinery wastewater treatment system upstream of the American Petroleum Institute (API) Separator.

3.4 Surveys

A hand held GPS receiver was used to record the coordinates of each soil boring location and each location was measured to within one foot of permanent site features. These coordinates were recorded on the field boring logs. The soil boring locations were subsequently surveyed by a registered surveyor.

The horizontal coordinates and elevation of each soil boring/monitoring well and the locations of all other pertinent structures was determined by a registered New Mexico professional land surveyor in accordance with the State Plane Coordinate System (NMSA 1978 47-1-49-56 (Repl. Pamp. 1993)). The surveys were conducted in accordance with Sections 500.1 through 500.12 of the Regulations and Rules of the Board of Registration for Professional Engineers and Surveyors Minimum Standards for Surveying in New Mexico. Horizontal positions were measured to the nearest 0.1-ft, and vertical elevations were measured to the nearest 0.01-ft. The survey data is included in Appendix C.

Section 4 Field Investigation Results

This section provides a summary of the surface and subsurface conditions at the refinery, including SWMUs No. 12, 13, 14, and 27. A discussion is included on the installation of soil borings, field screening of soils, and collection of soil samples for analysis. This is followed by a description of the installation of permanent well completions and the collection of groundwater samples. Groundwater and surface water conditions are described in the last two subsections.

4.1 Surface Conditions

Regionally, the surface topography slopes toward the floodplain of the San Juan River, which runs along the northern boundary of the refinery complex. To the south of the refinery, the drainage is to the northwest. North of the refinery, across the San Juan River, surface water flows in a southeasterly direction toward the San Juan River. The active portion of the refinery property, where the process units, storage tanks, and SWMUs No. 12, 13, 14, and 27 are located, is generally of low relief with an overall northwest gradient of approximately 0.02 ft./ft. The refinery sits on an alluvial floodplain terrace deposit and there is a steep bluff (approx. drop of 90 feet) at the northern boundary of the refinery where the San Juan River intersects the floodplain terrace, which marks the southern boundary of the floodplain.

There are two locally significant arroyos, one immediately east and another immediately west of the refinery. These arroyos collect most of the surface water flows in the area, thus significantly reducing surface water flows across the refinery and SWMUs No. 12, 13, 14, and 27. A minor drainage feature is located on the eastern portion of the refinery, where the former Landfill Pond (SWMU No. 9) was located. There are several steep arroyos located to the west along the northern refinery boundary on the steep bluff face that capture local surface water flows and minor groundwater discharges.

The refinery complex is bisected by County Road #4990 (Sullivan Road), which runs east-west. The process units, storage tanks (crude oil and liquid products), wastewater treatment systems, and SWMUs No. 12, 13, 14, and 27 are located north of the county road. The crude oil and product loading racks, LPG storage tanks and loading racks, maintenance buildings/90-day storage area, pipeline offices, transportation truck shop, and the Class I injection well are located south of the

county road. There is very little vegetation throughout these areas with most surfaces composed of concrete, asphalt, or gravel. The area between the refinery and the San Juan River does have limited vegetation on steep slopes that do not support dense vegetation.

4.2 Subsurface Conditions

Numerous soil borings and monitoring wells have been completed across the refinery property during previous site investigations and installation of the slurry wall, which runs along the northern and western refinery boundary. Based on the available site-specific and regional subsurface information, the site is underlain by the Quaternary Jackson Lake terrace deposits, which unconformably overlie the Tertiary Nacimiento Formation. The Jackson Lake deposits consist of fine grained sand, silt and clay that grades to coarse sand, gravel and cobble size material closer to the contact with the Nacimiento Formation. The Jackson Lake Formation is over 50 feet thick near the southeast portion of the site and generally thins to the northwest toward the San Juan River. The Nacimiento Formation is primarily composed of fine grained materials (e.g., carbonaceous mudstone/claystone with interbedded sandstones) with a reported local thickness of approximately 570 feet (Groundwater Technology Inc., 1994).

Figures 5, 6 and 7 present cross-sections of the shallow subsurface based on borings logs from onsite monitoring well completions. As shown in Cross-Section A-A' (Figure 5), the top of the Nacimiento Formation occurs at approximately 5495 feet MSL. The uppermost aquifer is under water table conditions and occurs within the sand and gravel deposits of the Jackson Lake Formation. The Nacimiento Formation functions as an aquitard at the site that prevents constituents from migrating to deeper aquifers. The potentiometric surface as measured in August 2012 is presented as Figure 8 and shows the groundwater generally flowing to the northwest.

Previous investigations have identified and delineated impacts to groundwater from historical site operations. Figure 3 shows the distribution of SPH in the subsurface based on the apparent thickness of SPH measured in monitoring wells. Dissolved-phase impacts are depicted on Figure 4.

4.3 Exploratory Drilling Investigations, Soil Sampling and Boring Abandonment

This subsection provides a description of subsurface investigations to locate potential impacts to soils and also the potential for deeper soil impacts to have migrated vertically to the underlying groundwater. This includes soil field screening results, soil sampling intervals and methods for detection of subsurface impacts in soils in the area of SWMUs No. 12, 13, 14, and 27.

The soil borings were drilled using the hollow-stem auguring (HSA) method, which utilizes split-spoons for sample collection, and a general description of the exploratory drilling activities is as follows. At some locations the HSA method was augmented with drilling with air and an inner auger bit to penetrate through the gravelly sands/sandy gravel. The drilling equipment was decontaminated between each borehole, as described in Appendix B.

The drilling / sampling results were conducted as follows:

- SWMU No. 12 Three soil borings were sampled to saturation.
- SWMU No. 13 Eighteen soil borings were sampled to saturation. Eight of the eighteen soil borings were drilled to the Nacimiento. Location SWMU 13-9, which was an additional boring added after approval of the Investigation Work Plan, was not drilled/sampled due to the presence of concrete. Two soil borings were completed as 2-inch wells. Five soil borings were completed as 4-inch wells. Eleven locations were sampled using a hand auger for collection of surface soil samples; and
- SWMU No. 14 Five soil borings were sampled to saturation.

Discrete soil samples were collected for laboratory analyses from within the following intervals:

- 0 feet 0.5 feet from native soil below any gravel fill material that may be present (at all surface soil sampling locations and at soil borings with evidence of significant impacts near the land surface);
- 1.5 feet 2.0 feet from native soil below any gravel fill material that may be present (all soil borings);
- > 2.0 feet (from the interval in each soil boring with the greatest apparent degree of contamination, based on field observations and field screening);
- From the 0.5 foot interval at the top of saturation (applicable only to borings that reach saturation); and
- Any additional intervals as determined based on field screening results.

Quality Assurance/Quality Control (QA/QC) samples were collected to monitor the validity of the soil sample collection procedures. One field duplicate was collected from each of the SWMU No. 12 and SWMU No. 14 areas. Two field duplicates were collected from the SWMU No. 13 area.

The installation of soil borings and collection of soil samples is discussed below in numerical order.

A description of the field screening and soil sampling procedures are presented in Appendix B.

Copies of the boring logs are provided in Appendix D, including logs prepared for surface soil sample

locations. In addition to being included on the soil boring logs, the soil vapor (i.e., headspace) screening results are summarized in Table 5. The locations of the soil borings and surface soil samples appear on Figure 2.

SWMU 12-1

On September 24, 2014 the drilling rig was set up on location SWMU 12-1 and sampled to a depth of 28 feet bgl. No surface soil sample was collected since there were no indications of impacted soil. A soil sample was collected from 0.5 feet - 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited a PID reading of 17.3 ppm. A second sample was collected from 4 feet - 6 feet bgl due to an elevated PID reading of 455 ppm. A third sample was collected from the 24 feet - 26 feet bgl. The PID reading was 325 ppm. Saturation was encountered at 26 feet bgl. The lithology consisted of clayey silt/silty clay (0 feet - 15.5 feet bgl), and gravelly sand (15.5 feet - 28 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 12-2

On September 23, 2014 the drilling rig was set up on location SWMU 12-2 and sampled to a depth of 30 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 177 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID reading of 126 ppm. A third sample was collected from the 6 feet - 8 feet bgl due to an elevated PID reading of 396 ppm. A fourth sample was collected from the 22 feet - 24 feet bgl. The PID reading was 71 ppm. Saturation was encountered at 28 feet bgl. There were no recoverable soil samples from 24 feet to 28 feet bgl. Therefore, the fourth sample was collected from the 22 feet - 24 feet bgl interval. The PID reading was 71 ppm. The lithology consisted of clayey silt/silty clay (0 feet – 14 feet bgl), clayey silt/sand (14 feet – 16 feet bgl), and gravelly sand (16 feet – 30 feet bgl). The boring was plugged with a cement/grout mixture on September 24, 2014.

SWMU 12-3

On September 23, 2014 the drilling rig was set up on location SWMU 12-3 and sampled to a depth of 30 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 1420 ppm. A soil sample and a duplicate soil sample were collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID reading of 3,046 ppm. A third sample was collected from the 2 feet - 4 feet bgl due to an elevated PID reading of 3,481 ppm. A fourth sample was collected from the 22 feet - 24 feet bgl due to an

elevated PID reading of 3,295 ppm. The fifth sample, collected from 26 feet – 28 feet bgl, was located immediately above saturation. The PID reading was 1,284 ppm. Saturation was encountered at 28 feet bgl. The lithology consisted of silty clay (0 feet – 2 feet bgl), silty sand (2 feet – 4 feet bgl), silt (4 feet - 8 feet bgl), clayey silt/silty clay (8 feet – 16 feet bgl), gravelly sand (16 feet – 20 feet bgl), sand (20 feet – 22 feet bgl), and gravelly sand (22 feet – 30 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 13-1

On September 22, 2014 the drilling rig was set up on location SWMU 13-1 and sampled to a depth of 30 feet bgl. No surface soil sample was collected since there were no indications of impacted soil. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited a slightly elevated PID reading of 24.9 ppm. A second sample was collected from 12 feet - 14 feet bgl due to an elevated PID reading of 4,390 ppm. The third sample, collected from 26 feet – 28 feet bgl, was located immediately above saturation. The PID reading was 3,130 ppm. Saturation was encountered at 28 feet bgl. The lithology consisted of clayey silt (0 feet – 4 feet bgl), silt (4 feet – 11.5 feet bgl), clayey silt/silty clay (11.5 feet – 14 feet bgl), silt (14 feet – 16 feet bgl), gravelly sand (16 feet – 22 feet bgl), sand (22 feet - 24 feet bgl) and gravelly sand (24 feet – 30 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 13-2

On September 22, 2014 the drilling rig was set up on location SWMU 13-2 and sampled to a depth of 28 feet bgl. No surface soil sample was collected since there were no indications of impacted soil. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited a PID reading of 13.7 ppm. A second sample was collected from 24 feet - 26 feet bgl due to an elevated PID reading of 1,985 ppm. The third sample, collected from 26 feet - 28 feet bgl, was located immediately above saturation. The PID reading was 1,481 ppm. Saturation was encountered at 28 feet bgl. The lithology consisted of a silty sand at the surface, silty clay (0.5 feet - 4 feet bgl), clayey silt (4 feet - 6 feet bgl), silt (6 feet - 7 feet bgl), silty sand (7 feet - 9 feet bgl), silt (9 feet - 12 feet bgl), clayey silt/silty clay (12 feet - 17 feet bgl), gravelly sand (17 feet - 20 feet bgl), sand (20 feet - 22 feet bgl) and gravelly sand (22 feet - 28 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 13-3

On September 23, 2014 the drilling rig was set up on location SWMU 13-3 and sampled to a depth of 30 feet bgl. No surface soil sample was collected since there were no indications of impacted soil. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited a PID reading of 7 ppm. A second sample was collected from 4 feet - 6 feet bgl due to an elevated PID reading of 5,124 ppm. The third sample, which was collected from 26 feet – 28 feet bgl, represented the sample from immediately above saturation. The PID reading was 4,054 ppm. Saturation was encountered at 28 feet bgl. The lithology consisted of clayey silt (0 feet – 2 feet bgl), sand (2 feet – 4 feet bgl), silt (4 feet – 12 feet bgl), silty clay (12 feet – 18 feet bgl), and gravelly sand (18 feet – 30 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 13-4

On September 25, 2014 the drilling rig was set up on location SWMU 13-4 and sampled to a depth of 35.5 feet bgl. No surface soil sample was collected since there were no indications of impacted soil. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited a PID reading of 18.2 ppm. A second sample was collected from 6 feet – 8 feet bgl due to an elevated PID reading of 1,781 ppm. The third sample, collected from 24 feet – 26 feet bgl, was located immediately above saturation. The PID reading was 4,009 ppm. Very moist to saturated conditions were encountered at 26 feet bgl. The lithology consisted of clayey silt (0 – 6 feet bgl), silt (6 feet – 10.5 feet bgl), clayey silt/silty clay (10.5 feet – 19.5 feet bgl), and gravelly sand (19.5 feet – 32 feet bgl). The Nacimiento Formation was encountered at 32 feet to 35.5 feet bgl and consisted of a friable, brown, weathered sandstone. The boring was plugged with a cement/grout mixture on October 3, 2014.

SWMU 13-5

On September 25, 2014 the drilling rig was set up on location SWMU 13-5 and sampled to a depth of 32 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 41 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID reading of 118 ppm. A third sample was collected from the 10 feet - 12 feet bgl due to an elevated PID reading of 1,250 ppm. The fourth sample, collected from 24 feet – 26 feet bgl, was located immediately above saturation. The PID reading was 1,550 ppm. Saturation was encountered at 26 feet bgl. The

lithology consisted of clayey silt/silt (0 feet – 12 feet bgl), silty clay (12 feet – 17.5 feet bgl), and sand/gravelly sand (17.5 feet – 30 feet bgl). The Nacimiento Formation was encountered at 30 feet – 32 feet bgl and consisted of a dense siltstone. The boring was completed as a permanent monitoring well as discussed in Section 4.4.

SWMU 13-6

On October 3, 2014 the drilling rig was set up on location SWMU 13-6 and sampled to a depth of 28 feet bgl. No surface soil sample was collected since there were no indications of impacted soil. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited an elevated PID reading of 269 ppm. A second sample was collected from the 10 feet - 12 feet bgl due to an elevated PID reading of 179 ppm. A third sample, collected from 24 feet – 26 feet bgl, was located immediately above saturation. The PID reading was 1,542 ppm. Saturation was encountered at 26 feet bgl. The lithology consisted of clayey silt (0 feet - 2 feet bgl), silt (2 feet – 8 feet bgl), clayey silt/silty clay (8 feet – 17.75 feet bgl), and gravelly sand (17.75 feet – 28 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 13-7

On October 6, 2014 the drilling rig was set up on location SWMU 13-7 and sampled to a depth of 26 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 295 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited a PID reading of 1,636 ppm. A third sample was collected from the 2 feet - 4 feet bgl due to an elevated PID reading of 1,584 ppm. A fourth sample was collected from the 14 feet – 16 feet bgl due to an elevated PID reading of 226 and the visual observation of black soils. The fifth sample, collected from 22 feet – 24 feet bgl, was from immediately above saturation. The PID reading was 1,560 ppm. Saturation was encountered at 24 feet bgl. The lithology consisted of clayey silt (0 feet – 2 feet bgl), silt (2 feet – 10.5 feet bgl), silty clay/clayey silt (10.5 feet – 16 feet bgl), gravelly sand (16 feet – 24 feet bgl), and silty sand (24 feet – 26 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 13-8

On September 26, 2014 the drilling rig was set up on location SWMU 13-8 and sampled to a depth of 28 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 184 ppm. A soil sample and a duplicate soil sample were collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID

reading of 2,245 ppm. A third sample was collected from the 22 feet - 24 feet bgl due to an elevated PID reading of 3,784 ppm. The fourth sample, collected from 24 feet - 26 feet bgl, was located immediately above saturation. The PID reading was 3,494 ppm. Saturation was encountered at 26 feet bgl. The lithology consisted of clayey silt (0 feet - 2 feet bgl), silt (2 feet - 10 feet bgl), silty clay/clayey silt (10 feet - 15 feet bgl), silt (15 feet - 16 feet bgl), sand (16 feet - 17.5 feet bgl) and gravelly sand (17.5 feet - 28 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 13-9

A large area of thick concrete was encountered in the area of the SWMU 13-9 location and no soil samples were collected at this location.

SWMU 13-10

On September 19, 2014 the drilling rig was set up on location SWMU 13-10 and sampled to a depth of 30 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 310 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID reading of 394 ppm. A third sample was collected from the 24 feet - 26 feet bgl due to an elevated PID reading of 4,588 ppm. The fourth sample, collected from 26 feet – 28 feet bgl, was located immediately above saturation. The PID reading was 3,138 ppm. Saturation was encountered at 28 feet bgl. The lithology consisted of clayey silt (0 feet – 4 feet bgl), silt (4 feet – 12 feet bgl), clayey silt/silty clay (12 feet – 16.5 feet bgl), silt (16.5 feet – 18 feet bgl), and gravelly sand (18 feet – 30 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 13-11

On October 2, 2014 the drilling rig was set up on location SWMU 13-11 and sampled to a depth of 30 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to a slightly elevated PID reading of 24 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID reading of 757 ppm. A third sample, collected from 26 feet – 28 feet bgl, was located immediately above saturation. The PID reading was 2,650 ppm. Saturation was encountered at 28 feet bgl. The lithology consisted of surficial sand (0 feet - 0.5 feet bgl), clayey silt (0.5 feet – 2 feet bgl), silt (2 feet – 12 feet bgl), silty clay (12 feet – 14 feet bgl), silt (14 feet – 16 feet bgl), silty sand (16 feet – 20 feet bgl), and gravelly sand (20 feet – 30 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 13-12

On October 2, 2014 the drilling rig was set up on location SWMU 13-12 and sampled to a depth of 28 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to a slightly elevated PID reading of 31 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited a PID reading of 17 ppm. A third sample was collected from the 16 feet - 18 feet bgl due to a slightly elevated PID reading of 35 ppm. The fourth sample, collected from 24 feet – 26 feet bgl, was immediately above saturation. The PID reading was 1,340 ppm. Saturation was encountered at 26 feet bgl. The lithology consisted of clayey silt (0 feet – 2 feet bgl), silt (2 feet – 12 feet bgl), silty clay/clayey silt (12 feet – 19.5 feet bgl), and gravelly sand (18 feet – 30 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 13-13

On October 7, 2014 the drilling rig was set up on location SWMU 13-13 and sampled to a depth of 32 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to a slightly elevated PID reading of 51 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited an elevated PID reading of 148 ppm. A third sample was collected from the 10 feet - 12 feet bgl due to an elevated PID reading of 230 ppm. The fourth sample, collected from 24 feet – 26 feet bgl, was located immediately above saturation. The PID reading was 4,150 ppm. Saturation was encountered at 26 feet bgl. The lithology consisted of clayey silt (0 feet – 4 feet bgl), silt (4 feet – 11.5 feet bgl), silty clay/clayey silt (11.5 feet – 15 feet bgl), silty sand (15 feet – 16 feet bgl), and gravelly sand (16 feet – 30 feet bgl). The Nacimiento Formation was encountered at 30 feet – 32 feet bgl and consisted of a dense weathered sandstone. The boring was completed as a permanent monitoring well as discussed in Section 4.4.

SWMU 13-14

On October 2, 2014 the drilling rig was set up on location SWMU 13-14 and sampled to a depth of 30 feet bgl. No surface soil sample was collected since there were no indications of impacted soil. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited an elevated PID reading of 2,210 ppm. A second sample was collected from the 2 feet - 4 feet bgl due to an elevated PID reading of 2,012 ppm. A third sample, collected from 26 feet – 28 feet bgl, was immediately above saturation. The PID reading was 2,625 ppm. Saturation was encountered at 28 feet bgl. The lithology consisted of clayey silt (0 feet - 2 feet bgl), silt (2 feet – 4 feet bgl), clayey silt (4 feet – 6 feet bgl), silt (6 feet – 12.5 feet bgl), silty clay (12.5

feet – 14 feet bgl), silt (14 feet - 16 feet bgl), clayey silt (16 feet – 18 feet bgl) and gravelly sand (18 feet – 30 feet bgl). The boring was plugged with a cement/grout mixture on October 9, 2014.

SWMU 13-15

On October 6, 2014 the drilling rig was set up on location SWMU 13-15 and sampled to a depth of 30 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to a slightly elevated PID reading of 36.1 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited a PID reading of 15.6 ppm. A third sample was collected from the 12 feet - 14 feet bgl due to an elevated PID reading of 4,556 ppm. A fourth sample was collected from the 14 feet – 16 feet bgl due to an elevated PID reading of 4,236 and the visual observation of black soils. The fifth sample, collected from 24 feet – 26 feet bgl, was the lowermost sample collected prior to encountering the Nacimiento Formation. The PID reading was 2,939 ppm. Saturation was not readily apparent at this location. The lithology consisted of clayey silt (0 feet – 4 feet bgl), silt (4 feet – 10 feet bgl), clayey silt/silty clay (10 feet – 17.5 feet bgl), and gravelly sand (17.5 feet – 28 feet bgl). The Nacimiento Formation was encountered at 28 feet – 30 feet bgl and consisted of a weathered sandstone/siltstone. The boring was completed as a permanent monitoring well as discussed in Section 4.4.

SWMU 13-16

On September 24, 2014 the drilling rig was set up on location SWMU 13-16 and sampled to a depth of 32 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 555 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID reading of 615 ppm. A third sample was collected from the 18 feet - 20 feet bgl due to an elevated PID reading of 329 ppm. The fourth sample, which was from the interval immediately above saturation, was collected from 26 feet - 28 feet bgl. The PID reading was 2,487 ppm. Saturation was encountered at 28 feet bgl. The lithology consisted of silty clay (0 feet – 4 feet bgl), silt (4 feet – 10 feet bgl), clayey silt (10 feet – 12 feet bgl), silt (12 feet – 19 feet bgl), and gravelly sand (19 feet – 31.5 feet bgl). The Nacimiento Formation was encountered at 31.5 feet – 32 feet bgl and consisted of a dense siltstone. The boring was completed as a permanent monitoring well as discussed in Section 4.4.

SWMU 13-17

On September 30, 2014 the drilling rig was set up on location SWMU 13-17 and sampled to a depth of 35 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated

PID reading of 45.9 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID reading of 218 ppm. A third sample was collected from the 6 feet - 8 feet bgl due to an elevated PID reading of 424 ppm. The fourth sample, collected from 24 feet - 26 feet bgl, was located above saturation. The PID reading was 1,824 ppm. Saturation was encountered at 27 feet bgl. The lithology consisted of clayey silt (0 feet - 8 feet bgl), silt (8 feet - 11 feet bgl), clayey silt/silty clay (11 feet - 17 feet bgl), gravelly sand (17 feet - 18 feet bgl), sand (18 feet - 22 feet bgl), and gravelly sand (22 feet - 33 feet bgl). The Nacimiento Formation was encountered at 33 feet - 35 feet bgl and consisted of a weathered sandstone. The boring was completed as a permanent monitoring well as discussed in Section 4.4.

SWMU 13-18

On September 19, 2014 the drilling rig was set up on location SWMU 13-18 and sampled to a depth of 34 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 288 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID reading of 722 ppm. A third sample was collected from the 12 feet - 14 feet bgl due to an elevated PID reading of 350 ppm. A fourth sample was collected from the 22 feet - 24 feet bgl due to an elevated PID reading of 1,340 ppm. The fifth sample, collected from 24 feet – 26 feet bgl, was located immediately above saturation. The PID reading was 3,345 ppm. Saturation was encountered at 26 feet bgl. The lithology consisted of clayey silt (0 feet – 4 feet bgl), silt (4 feet – 12 feet bgl), clayey silt (12 feet – 16 feet bgl), silty sand (16 feet – 17 feet bgl), gravelly sand (17 feet – 22 feet bgl), sand (22 feet – 28 feet bgl), and sandy gravel (28 feet – 32 feet bgl). The Nacimiento Formation was encountered at 32 feet – 34 feet bgl and consisted of a weathered sandstone. The boring was completed as a permanent monitoring well as discussed in Section 4.4.

SWMU 13-19

On October 8, 2014 the drilling rig was set up on location SWMU 13-19 and sampled to a depth of 33 feet bgl. No surface soil sample was collected since there were no indications of impacted soil. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample exhibited a PID reading of 11.4 ppm. A second sample was collected from the 12 feet - 14 feet bgl due to an elevated PID reading of 71.3 ppm. The third sample, collected from 26 feet – 28 feet bgl, was located immediately above saturation. The PID reading was 2,010 ppm. Saturation was encountered at 28 feet bgl. The lithology consisted of clayey silt (0 feet – 4 feet bgl), silt (4 feet

- 10 feet bgl), silty clay/clayey silt (10 feet - 16 feet bgl), silty sand (16 feet - 18 feet bgl), and gravelly sand (18 feet - 31 feet bgl). The Nacimiento Formation was encountered at 32 feet - 34 feet bgl and consisted of a weathered sandstone/siltstone. The boring was completed as a permanent monitoring well as discussed in Section 4.4.

SWMU 13-20

On September 29, 2014 a hand auger was used at location SWMU 13-20 to collect one surface soil sample (0 feet – 0.5 feet bgl). This sample exhibited a PID reading of 3.4 ppm. The lithology consisted of clayey sand.

SWMU 13-21

On September 29, 2014 a hand auger was used at location SWMU 13-21 to collect one surface soil sample (0 feet – 0.5 feet bgl). This sample exhibited a PID reading of 1.6 ppm. The lithology consisted of clayey sand.

SWMU 13-22

On September 29, 2014 a hand auger was used at location SWMU 13-22 to collect one surface soil sample (0 feet – 0.5 feet bgl). This sample exhibited a PID reading of 1.1 ppm. The lithology consisted of silty sand.

SWMU 13-23

On September 29, 2014 a hand auger was used at location SWMU 13-23 to collect one surface soil sample (0 feet – 0.5 feet bgl). This sample exhibited a PID reading of 52.6 ppm. The lithology consisted of clayey silt.

SWMU 13-24

On September 29, 2014 a hand auger was used at location SWMU 13-24 to collect one surface soil sample (0 feet – 0.5 feet bgl). This sample exhibited a PID reading of 1.1 ppm. The lithology consisted of clayey silt/sand.

SWMU 13-25

On September 29, 2014 a hand auger was used at location SWMU 13-25 to collect one surface soil sample (0 feet – 0.5 feet bgl). This sample exhibited a PID reading of 3.1 ppm. The lithology consisted of silty sand.

SWMU 13-26

On September 29, 2014 a hand auger was used at location SWMU 13-26 to collect one surface soil sample (0 feet – 0.5 feet bgl). This sample exhibited a PID reading of 1.8 ppm. The lithology consisted of silty sand.

SWMU 13-27

On September 29, 2014 a hand auger was used at location SWMU 13-27 to collect one surface soil sample (0 feet – 0.5 feet bgl) and one duplicate sample (SWMU 13 DUPO2). This sample exhibited a PID reading of 0.7 ppm. The lithology consisted of silty sand.

SWMU 13-28

On September 29, 2014 a hand auger was used at location SWMU 13-28 to collect one surface soil sample (0 feet – 0.5 feet bgl). This sample exhibited a PID reading of 0.9 ppm. The lithology consisted of silty sand.

SWMU 13-29

On September 29, 2014 a hand auger was used at location SWMU 13-29 to collect one surface soil sample (0 feet – 0.5 feet bgl). This sample exhibited a PID reading of 1.2 ppm. The lithology consisted of silty sand.

SWMU 13-30

On September 29, 2014 a hand auger was used at location SWMU 13-30 to collect one surface soil sample (0 feet – 0.5 feet bgl). This sample exhibited a PID reading of 1.3 ppm. The lithology consisted of gravelly clayey sand.

SWMU 14-1

On September 17, 2014 the drilling rig was set up on location SWMU 14-1 and sampled to a depth of 22 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to a slightly elevated PID reading of 25.5 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited a slightly elevated PID reading of 24.1 ppm. A third sample was collected from the 8 feet - 10 feet bgl due to an elevated PID reading of 116 ppm. The fourth sample, collected from 18 feet – 20 feet bgl, was located immediately above saturation. The PID reading was 8,581 ppm. Saturation was encountered at 20 feet bgl. The lithology consisted of clayey silt (0 feet – 7 feet bgl), silty clay (7 feet – 10.5 feet bgl), sand (10.5 feet

 - 14 feet bgl), and gravelly sand (14 feet - 22 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 14-2

On September 17, 2014 the drilling rig was set up on location SWMU 14-2. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 120 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID reading of 160 ppm. The boring was sampled to a depth of 14 feet bgl and drilling/sampling was discontinued for the day. The soils from the 12 feet – 14 feet bgl interval were placed in sample containers since it exhibited the highest PID reading (130 ppm) of the samples collected from 2 feet – 14 feet bgl.

On September 18, 2014 sampling continued at location SWMU14-2. A sample was collected from the 18 feet – 20 feet bgl interval due to an elevated PID reading of 2,047 ppm. The sample collected from the previous day from the 12 feet – 14 feet bgl interval was discarded. The fourth sample collected, 20 feet – 22 feet bgl, was located immediately above saturation. The PID reading was 6,434 ppm. Saturation was encountered at 22 feet bgl. The lithology consisted of clayey silt (0 feet – 11 feet bgl), silt (11 feet – 14 feet bgl), and gravelly sand (14 feet – 22 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 14-3

On September 16, 2014 the drilling rig was set up on location SWMU 14-3 and sampled to a depth of 20 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 1,515 ppm. A soil sample and a duplicate soil sample (SWMU14 DUP01) were collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This interval exhibited an elevated PID reading of 2,149 ppm. The third soil sample was collected from 4 feet – 6 feet bgl. This interval exhibited the highest PID reading recorded for this soil boring, 6,428 ppm. The fourth sample collected from this boring, 14 feet – 16 feet bgl, exhibited an elevated PID reading of 3,722 ppm. This sample was collected to satisfy the requirement for a sample to be collected immediately above saturation since there was not enough material in the 16 feet – 18 interval for sample collection. The saturated interval, 18 feet – 20 feet bgl exhibited a hydrocarbon odor. The lithology included clayey silt (0 feet – 6 feet bgl), gravelly sand (6 feet – 8 feet bgl), sand (8 feet -12 feet bgl), gravelly sand (12 feet – 18 feet bgl), and sandy gravel (18 feet – 20 feet bgl). The boring was plugged with a cement /grout mixture the same day.

SWMU 14-4

On September 15, 2014 the drilling rig was set up on location SWMU 14-4. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to an elevated PID reading of 52.6 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited an elevated PID reading of 93.8 ppm. The boring was sampled to a depth of 2 feet bgl and drilling/sampling was discontinued for the day after refusal was encountered. It was determined that the boring had encountered an electric utility line and that it would necessary to offset the location to clear the underground utilities.

On September 18, 2014 sampling continued at location SWMU14-4 with the initial location offset by approximately seven feet. A sample was collected from the 6 feet - 8 feet bgl interval due to an elevated PID reading of 108 ppm. The fourth sample was collected from the boring from 18 feet - 20 feet bgl, which was immediately above saturation. The PID reading was 867 ppm. Saturation was encountered at 20 feet bgl. The lithology consisted of clayey silt (0 feet – 4 feet bgl), silty clay (4 feet – 8 feet bgl), and sandy gravel (8 feet – 22 feet bgl). The boring was plugged with a cement/grout mixture the same day.

SWMU 14-5

On September 17, 2014 the drilling rig was set up on location SWMU 14-5 and sampled to a depth of 30 feet bgl. One surface soil sample was collected from 0 feet – 0.5 feet bgl due to a slightly elevated PID reading of 23.5 ppm. A soil sample was collected from 0.5 feet – 2 feet bgl to satisfy the requirements in the work plan. This sample also exhibited a slightly elevated PID reading of 22.7 ppm. A third sample was collected from the 16 feet -18 feet bgl due to an elevated PID reading and the occurrence of PSH immediately above the interval. The fourth sample was collected from 26 feet – 28 feet bgl, which was immediately above saturation and was considered to be representative of the soil conditions between 20 and 28 feet bgl where the PID readings were greater than 3,000 ppm. Saturation was encountered at 28 feet bgl. The lithology consisted of clayey silt (0 feet – 3.5 feet bgl), silty sandy clay (3.5 feet – 6 feet bgl), clayey silt (6 feet – 8 feet bgl), clayey sand (8 feet – 11.5 feet bgl), sandy clay (11.5 feet - 12 feet bgl), gravelly sandy clay (12 feet – 16 feet bgl), sandy clay (16 feet – 18 feet bgl), sandy gravel (18 feet – 22 feet bgl), gravelly sand (22 feet – 28.5 feet bgl – saturation was at 28 feet bgl) and then the Nacimiento Formation from 28.5 feet – 30 feet bgl. The boring was plugged with a cement/grout mixture the same day.

4.4 Monitoring Well Construction and Groundwater Sampling

This section describes the methods and details of monitor well construction and the collection of groundwater samples. The description includes the dates of well construction. The wells and groundwater samples are discussed in numerical order of the associated soil borings. Copies of the boring and well construction logs are provided in Appendix D. The well development and purging procedures and groundwater sample collection procedures are discussed in Appendix B. The locations of the monitor wells from which groundwater samples were collected appear on Figures 2 and 25 through 32.

MW-71 (SWMU 13-18)

On September 19, 2014 the drilling rig was set up on location SWMU 13-18 and sampled to a depth of 34 feet bgl. Saturation was encountered at 26 feet bgl. The saturated interval consists of sand and sandy gravel and exhibited a strong odor. Phase-separated hydrocarbon was observed on the soil core collected from the 26 feet – 28 feet bgl interval. The Nacimiento Formation was encountered at 32 feet – 34 feet bgl and consisted of a weathered sandstone that was described as consisting of a medium grained sand that was firm to soft, tan, damp, and exhibiting a faint odor.

In order to accommodate the screen placement the borehole was advanced to a depth of 35.5 feet bgl. Slotted (0.01 inch) 2-inch rigid PVC well screen was placed at the bottom of the boring and extended for 20 feet (15 to 35 feet bgl) to ensure that the entire saturated zone was open to the well. The 10/20 sand filter pack was installed to 13 feet bgl. As the sand was installed in the well bore the hollow stem augers were removed. Approximately 3 feet of bentonite was placed over the filter pack and hydrated. An annular cement/grout mixture was installed over the bentonite to within two feet of the land surface.

The surface completion consists of stickup completion, which includes a protective PVC enclosure that was secured in a concrete pad measuring 4 feet by 4 feet wide by 6 inches thick. The concrete pad was wire reinforced. Four-inch diameter steel bollards were installed 6 inches from each corner of the concrete pad. The bollards were installed two feet below grade and extended three feet above grade. The holes for the bollards were dug by hand with the diameter of the borehole measured a minimum of 6-inches. Each bollard was cemented into the ground with the cement extending from the bottom of the hole to the surface. The bollard was filled with cement. Each bollard was pretreated to remove rust, primed, and painted with two coats of safety-yellow paint.

Groundwater samples were collected at MW-71 (SWMU 13-18) on October 30, 2014 after the well was completed and developed. The initial water samples were collected even though SPH was found in the well to provide qualitative information on what constituents may be present in the area. Water samples were not collected during the second sampling event in December 2014 because SPH was present in the well.

MW-72 (SWMU 13-16)

On September 24, 2014 the drilling rig was set up on location SWMU 13-16 and sampled to a depth of 32 feet bgl. Saturation was encountered at 28 feet bgl. The saturated interval consists of black, gravelly sand and exhibited a strong odor. On September 25, 2014 drilling resumed. The Nacimiento Formation was encountered at 31.5 feet – 32 feet bgl and consisted of a weathered siltstone that was described as dense, dry to damp, olive and with no odor. On September 29, 2014 the drilling rig was set up on location SWMU 13-16 for well installation. During the over reaming of the borehole with larger augers for the installation of a 4-inch well the roller chain in the rotary box broke. On September 30, 2104 the rig was repaired and the drilling continued.

In order to accommodate the screen placement the borehole was advanced to a depth of 33.5 feet bgl. Slotted (0.01 inch) 4-inch rigid PVC well screen was placed at the bottom of the boring and extended for 10 feet (22.5 feet to 32.5 feet bgl) to ensure that the entire saturated zone was open to the well. The 10/20 sand filter pack was installed to 20 feet bgl. As the sand was installed in the well bore the hollow stem augers were removed. Approximately 3 feet of bentonite was placed over the filter pack and hydrated. An annular cement/grout mixture was installed over the bentonite to within two feet of the land surface.

The surface completion consists of a stickup completion, which includes a protective PVC casing that was secured in a concrete pad measuring 4 feet by 4 feet wide by 6 inches thick. The concrete pad was wire reinforced. Four-inch diameter steel bollards were installed 6 inches from each corner of the concrete pad. The bollards were installed two feet below grade and extended three feet above grade. The holes for the bollards were dug by hand with the diameter of the borehole measured a minimum of 6-inches. Each bollard was cemented into the ground with the cement extending from the bottom of the hole to the surface. The bollard was filled with cement. Each bollard was pretreated to remove rust, primed, and painted with two coats of safety-yellow paint.

Groundwater samples were collected at MW-72 (SWMU 13-16) on November 6, 2014 and December 16, 2014. The water samples were collected following the procedures discussed in Appendix B.

MW-73 (SWMU 13-17)

On September 30, 2014 the drilling rig was set up on location SWMU 13-17 and sampled to a depth of 35 feet bgl. Saturation was encountered at 27 feet bgl. The saturated interval consists of black, gravelly sand and exhibited an odor. The Nacimiento Formation was encountered at 33 feet – 35 feet bgl and consisted of a weathered sandstone. Drilling activities were then shut down for the day.

On October 1, 2014 drilling resumed. The smaller hollow stem augers were removed and the borehole was over reamed using the larger augers for the installation of a 4-inch well. In order to accommodate the screen placement the borehole was advanced to a depth of 35 feet bgl. Slotted (0.01 inch) 4-inch rigid PVC well screen was placed at the bottom of the boring and extended for 15 feet (19 feet to 34 feet bgl) to ensure that the entire saturated zone was open to the well. The 10/20 sand filter pack was installed to 17 feet bgl. As the sand was installed in the well bore the hollow stem augers were removed. Approximately 3 feet of bentonite was placed over the filter pack and hydrated. An annular cement/grout mixture was installed over the bentonite to within two feet of the land surface.

The surface completion consists of a stickup completion, which includes a protective PVC casing that was secured in a concrete pad measuring 4 feet by 4 feet wide by 6 inches thick. The concrete pad was wire reinforced. Four-inch diameter steel bollards were installed 6 inches from each corner of the concrete pad. The bollards were installed two feet below grade and extended three feet above grade. The holes for the bollards were dug by hand with the diameter of the borehole measured a minimum of 6-inches. Each bollard was cemented into the ground with the cement extending from the bottom of the hole to the surface. The bollard was filled with cement. Each bollard was pretreated to remove rust, primed, and painted with two coats of safety-yellow paint.

Groundwater samples were collected at MW-73 (SWMU 13-17) on November 6, 2014 and December 16, 2014. The water samples were collected following the procedures discussed in Appendix B.

MW-74 (SWMU 13-5)

On September 25, 2014 the drilling rig was set up on location SWMU 13-5 and sampled to a depth of 32 feet bgl. Saturation was encountered at 26 feet bgl. The saturated interval consists of sand and gravelly sand and exhibited a strong odor. Phase-separated hydrocarbon was observed on the soil core collected from the 28 feet – 30 feet bgl interval. The Nacimiento Formation was

encountered at 30 feet – 32 feet bgl and consisted of a very dense, dry, siltstone. The drilling and soil sampling activities for this location ceased.

On October 1, 2014 drilling resumed to complete the boring as a permanent well. The borehole was over reamed using the larger augers for the installation of a 4-inch well. In order to accommodate the screen placement the borehole was advanced to a depth of 32 feet bgl. Slotted (0.01 inch) 4-inch rigid PVC well screen was placed at the bottom of the boring and extended for 15 feet (16 feet to 31 feet bgl) to ensure that the entire saturated zone was open to the well. The 10/20 sand filter pack was installed to 14 feet bgl. As the sand was installed in the well bore the hollow stem augers were removed. Approximately 3 feet of bentonite was placed over the filter pack and hydrated. An annular cement/grout mixture was installed over the bentonite to within two feet of the land surface.

The surface completion consists of a stickup completion, which includes a protective PVC casing that was secured in a concrete pad measuring 4 feet by 4 feet wide by 6 inches thick. The concrete pad was wire reinforced. Four-inch diameter steel bollards were installed 6 inches from each corner of the concrete pad. The bollards were installed two feet below grade and extended three feet above grade. The holes for the bollards were dug by hand with the diameter of the borehole measured a minimum of 6-inches. Each bollard was cemented into the ground with the cement extending from the bottom of the hole to the surface. The bollard was filled with cement. Each bollard was pretreated to remove rust, primed, and painted with two coats of safety-yellow paint.

Groundwater samples were collected at MW-74 (SWMU 13-5) on November 6, 2014; however, SPH was found in the well during a scheduled second sampling event on December 16, 2014 and a water sample was not collected. The water samples were collected following the procedures discussed in Appendix B.

MW-75 (SWMU 13-15)

On October 6, 2014 the drilling rig was set up on location SWMU 13-15 and sampled to a depth of 26 feet bgl. Drilling activities ceased for the day at this location. On October 7, 2014 drilling and sampling resumed. Saturation was not readily apparent at this location. The Nacimiento Formation was encountered at 28 feet – 30 feet bgl and consisted of a weathered sandstone/siltstone that was described as very fine grained, friable, greenish gray, damp, and exhibiting a faint odor.

Slotted (0.01 inch) 2-inch rigid PVC well screen was placed at the bottom of the boring and extended for 10 feet (19.5 feet to 29.5 feet bgl) to ensure that the entire saturated zone was open to the well.

The 10/20 sand filter pack was installed to 17.5 feet bgl. As the sand was installed in the well bore the hollow stem augers were removed. Approximately 2.5 feet of bentonite was placed over the filter pack and hydrated. An annular cement/grout mixture was installed over the bentonite to within two feet of the land surface.

The surface completion consists of a stickup completion, which includes a protective PVC casing that was secured in a concrete pad measuring 4 feet by 4 feet wide by 6 inches thick. The concrete pad was wire reinforced. Four-inch diameter steel bollards were installed 6 inches from each corner of the concrete pad. The bollards were installed two feet below grade and extended three feet above grade. The holes for the bollards were dug by hand with the diameter of the borehole measured a minimum of 6-inches. Each bollard was cemented into the ground with the cement extending from the bottom of the hole to the surface. The bollard was filled with cement. Each bollard was pretreated to remove rust, primed, and painted with two coats of safety-yellow paint.

Groundwater samples were collected at MW-75 (SWMU 13-15) on November 6, 2014 and December 16, 2014. The water samples were collected following the procedures discussed in Appendix B.

MW-76 (SWMU 13-13)

On October 7, 2014 the drilling rig was set up on location SWMU 13-13 and sampled to a depth of 32 feet bgl. Saturation was encountered at 26 feet bgl. The saturated interval consists of a gravelly sand that was described as black and exhibited an odor and a sheen. The Nacimiento Formation was encountered at 30 feet – 32 feet bgl and consisted of a very fine grained, dense, weathered sandstone.

The borehole was over reamed using the larger augers for the installation of a 4-inch well. In order to accommodate the screen placement the borehole was advanced to a depth of 32 feet bgl. Slotted (0.01 inch) 4-inch rigid PVC well screen was placed at the bottom of the boring and extended for 10 feet (21 feet to 31 feet bgl) to ensure that the entire saturated zone was open to the well. The 10/20 sand filter pack was installed to 19 feet bgl. As the sand was installed in the well bore the hollow stem augers were removed. Approximately 3 feet of bentonite was placed over the filter pack and hydrated. An annular cement/grout mixture was installed over the bentonite to within two feet of the land surface.

The surface completion consists of a stickup completion, which includes a protective PVC casing that was secured in a concrete pad measuring 4 feet by 4 feet wide by 6 inches thick. The concrete pad

was wire reinforced. Four-inch diameter steel bollards were installed 6 inches from each corner of the concrete pad. The bollards were installed two feet below grade and extended three feet above grade. The holes for the bollards were dug by hand with the diameter of the borehole measured a minimum of 6-inches. Each bollard was cemented into the ground with the cement extending from the bottom of the hole to the surface. The bollard was filled with cement. Each bollard was pretreated to remove rust, primed, and painted with two coats of safety-yellow paint.

Groundwater samples were collected at MW-76 (SWMU 13-13) on November 6, 2014 and December 16, 2014. The water samples were collected following the procedures discussed in Appendix B.

MW-77 (SWMU 13-19)

On October 8, 2014 the drilling rig was set up on location SWMU 13-19 and sampled to a depth of 33 feet bgl. Saturation was encountered at 28 feet bgl. The saturated interval consists of gravelly sand that was black and exhibited an odor. The Nacimiento Formation was encountered at 31 feet – 33 feet bgl and consisted of a weathered sandstone/siltstone that was described as dense, damp, brown to yellowish brown, and exhibited an odor.

The borehole was over reamed using the larger augers for the installation of a 4-inch well. In order to accommodate the screen placement the borehole was advanced to a depth of 33 feet bgl. Slotted (0.01 inch) 4-inch rigid PVC well screen was placed at the bottom of the boring and extended for 10 feet (22 feet to 32 feet bgl) to ensure that the entire saturated zone was open to the well. The 10/20 sand filter pack was installed to 19.5 feet bgl. As the sand was installed in the well bore the hollow stem augers were removed. Approximately 2 feet of bentonite was placed over the filter pack and hydrated. An annular cement/grout mixture was installed over the bentonite to within two feet of the land surface.

The surface completion consists of a stickup completion, which includes a protective PVC casing that was secured in a concrete pad measuring 4 feet by 4 feet wide by 6 inches thick. The concrete pad was wire reinforced. Four-inch diameter steel bollards were installed 6 inches from each corner of the concrete pad. The bollards were installed two feet below grade and extended three feet above grade. The holes for the bollards were dug by hand with the diameter of the borehole measured a minimum of 6-inches. Each bollard was cemented into the ground with the cement extending from the bottom of the hole to the surface. The bollard was filled with cement. Each bollard was pretreated to remove rust, primed, and painted with two coats of safety-yellow paint.

Groundwater samples were collected at MW-77 (SWMU 13-19) on October 30, 2014 after the well was completed and developed. The initial water samples were collected even though SPH was found in the well to provide qualitative information on what constituents may be present in the area. Water samples were not collected during the second sampling event in December 2014 because SPH was present in the well.

4.5 Groundwater Conditions

The uppermost aquifer is under water table conditions and occurs within the sand and gravel deposits of the Jackson Lake Formation. The Nacimiento Formation functions as an aquitard at the site and prevents site related contaminants from migrating to deeper aquifers. The potentiometric surface as measured in April 2012 is presented in Figure 8 and shows the groundwater generally flowing to the northwest. The potentiometric surface at the site is consistent with the regional gradient in that movement is toward to the San Juan River, which is a location of regional groundwater discharge. The installation of the North Boundary Barrier Wall (i.e., slurry wall) and collection wells/French drain along the western and northern boundary of the refinery controls the flow of groundwater in this area and has basically eliminated the discharge of groundwater from the refinery along this area.

The slurry wall was designed and installed as a permanent control measure to prevent further potential discharges of groundwater to surface water and the generation of seeps along the bluff. Subsequent to the installation of the slurry wall in 2005 and with the continued recovery of groundwater from the Hammond Ditch French drain, the discharge from the seeps was significantly reduced. No SPH has been observed in the discharge from the seeps since installation of the slurry wall. The areas with the greatest saturated thickness are generally found near and along the Hammond Ditch and on-site surface impoundments (i.e., the current and former raw water ponds). The predominant source of recharge to the shallow aquifer beneath the refinery is recharge from man-made features (e.g., the Hammond Ditch and on-site surface impoundments). The saturated thickness beneath the refinery varies from zero feet in the southern portion of the site to a maximum of approximately eight feet along the northern portion of the refinery, on the up-gradient side of the slurry wall.

4.6 Surface Water Conditions

The only local surface water body, excluding on-site surface impounds and the Hammond Irrigation Ditch, is the San Juan River, which flows along the northern most property boundary. There were no

accumulations of surface water observed during the site investigation in the areas of SWMUs No. 12, 13, 14, and 27.

Regionally, the surface topography slopes toward the floodplain of the San Juan River, and across most of the refinery and to the south of the refinery, the drainage is to the northwest. There is a steep bluff (approximate drop of 90 feet) at the northern boundary of the refinery where the San Juan River intersects the floodplain terrace, which marks the southern boundary of the floodplain.

There are two locally significant arroyos, one immediately east and another immediately west of the refinery, which collect most of the surface water flows in the area, thus significantly reducing surface water flows across the refinery and SWMUs No. 12, 13, 14, and 27. A minor drainage feature is located on the eastern portion of the refinery, where the Landfill Pond (SWMU No. 9) was located and there are several steep arroyos along the northern refinery boundary that primarily capture only local surface water flows. There are smaller arroyos located on the bluff face and the seeps are generally near the headwall of the arroyos or along the arroyos.

The average annual rainfall is only approximately 8.6 inches, thus the threat of surface water transport of contaminants as suspended load or dissolved phase is low. The refinery implements a Stormwater Pollution Prevention Plan to ensure that surface waters of the State are not impacted by refinery operations.

4.7 Vadose Zone Vapor Sampling Results

Prior to collection of the groundwater samples, a total well vapor sample was collected and field analyzed for carbon dioxide and oxygen. Field vapor measurements were collected using a multi-gas meter as described in Appendix B and the results were recorded on a field sampling log. These measurements are included in Table 10.

The O2 and CO2 levels measured during the initial sampling event in November 2014 indicate biologic activity in the vadose zone. This is reflected by O2 levels less than anticipated ambient concentrations of approximately 21% and elevated CO2 levels (> 0%). Oxygen levels were near ambient concentrations of 21% and CO2 was not detected during the second sampling event conducted in December 2014.

Section 5 Regulatory Criteria

The applicable screening and cleanup levels are specified in Section VII of the Order issued by NMED on July 2, 2007. The soil cleanup levels are based on a target excess cancer risk of 10⁻⁵ for carcinogenic contaminants and a target hazard index of 1.0 for noncarcinogenic contaminants. The Order specifies a hierarchy of screening levels, with the screening levels based on NMED guidance taking precedence over EPA's Region VI Human Health Medium Specific Screening Levels with one exception for groundwater. If both a New Mexico Water Quality Control Commission standard and federal Maximum Contaminant Level (MCL) are available for an individual constituent, then the lower of the two levels is used as the screening level. Based on direction received from NMED subsequent to issuance of the Order, EPA's Region VI Human Health Medium Specific Screening Levels have been replaced with EPA Regional Screening Levels dated April 2009. The NMED guidance document used to establish cleanup levels is the *Risk Assessment Guidance for Site Investigations and Remediation* (December 2014), which supersedes the *Technical Background Document for Development of Soil Screening Levels* (Revision 5.0 dated August 2009) and *Total Petroleum Hydrocarbon (TPH) Screening Guidelines* (dated October 2006).

For non-residential properties (e.g., the Bloomfield Refinery), the soil screening levels must be protective of commercial/industrial workers throughout the upper two feet of surface soils and construction workers throughout the upper ten feet based on NMED criteria. NMED residential soil screening levels are applied to the upper ten feet and soil screening levels for protection of groundwater apply throughout the vadose zone. EPA soil screening levels for direct contact exposure apply to the upper two feet of the vadose zone. To achieve closure as "corrective action complete without controls", the affected media must meet residential screening levels, which are presented in Table 2. Table 3 provides a list of the available NMED and EPA soil screening levels for non-residential properties. While Tables 2 and 3 indicate the various depths to which the individual soil screening levels are applicable, Table 6 discussed below does not include this level of detail.

The aforementioned Tables 2 and 3 have soil screening levels for the soil-to-groundwater pathway that are based on a dilution/attenuation factor (DAF) of 1.0 and 11.25 A review of site conditions indicates that a DAF of 1.0 is overly conservative, thus a site-specific DAF value was calculated. A review of the site-specific conditions at each of the SWMUs and AOCs recently investigated indicates

that the conditions at SWMU No. 2 Drum Storage Area North Bone Yard could present a greater potential for constituents to leach from soils to the underlying groundwater because SWMU No. 2 has the shallowest depth to groundwater and although it may be overly conservative for the SWMUs investigated under Group 9 and SWMU No. 27, the same DAF value of 11.25 is applied at all locations presented in this Investigation Report. The documentation of the calculation of the site-specific DAF value is provided in Appendix E.

The soil screening levels that are compared to individual soil sample results for SWMUs No. 12, 13, 14, and 27 are presented in Table 6. The screening levels in Table 6 include residential land use, non-residential land use, and screening levels to evaluate the potential for constituents to migrate to groundwater using the site-specific DAF of 11.25. The screening levels in Table 6 have not been segregated based on depth of the soil sample as discussed above for Tables 2 and 3. The soil screening level for arsenic in Table 6 is adjusted to account for naturally occurring concentrations of arsenic in site soils as demonstrated in the Investigation Report Background Concentrations (Western Refining Southwest, Inc., 2014). The DAF screening level for arsenic is less than the background value of 3.2 mg/kg, thus the DAF screening level was replaced with the background concentration of 3.2 mg/kg.

The groundwater cleanup levels are based on New Mexico Water Quality Control Commission (WQCC) standards (20.6.2.7 WW NMAC, 20.6.2.3103, and 20.6.2.4103) unless there is a federal MCL, in which case the lower of the two values is selected as the cleanup level. If neither a WCQQ standard nor an MCL is available, then the cleanup level is based on a NMED Tap Water Screening Level pursuant to direction of NMED subsequent to issuance of the Order. It is noted that for some constituents (e.g., barium, chromium, iron, manganese, and silver) the WQCC standards only apply to the dissolved portion and thus a different screening level (e.g., the New Mexico Tap Water Screening Level) could apply to the total analyses for such constituents. If a NMED Tap Water Screening Level is not available for a constituent, then an EPA Regional Screening Level is used. Table 4 presents all of the groundwater screening levels, with the applicable cleanup level highlighted. The reported groundwater concentrations are compared to the applicable cleanup levels in Table 7.

A review of the NMED TPH Screening Guidelines (dated Dec. 2014) indicates that the TPH screening levels were developed based on screening levels and compositional assumptions developed by the Massachusetts Department of Environmental Protection (MADEP). The screening levels were developed to be protective of direct contact exposures. The analytical results, as presented in Tables 6 and 7, are reported for gasoline range organics (C6-C10), diesel range organics (>C10-

C28), and motor oil range organics (>C28-C35). The applicable TPH screening levels used for comparison to the individual samples are selected from Table 6-2 of the NMED guidance. Because the specific type of products (e.g., diesel fuel or jet fuel) that were potentially released from the various SWMUs is not always known, "unknown oil" was selected from Table 6-2 for comparison to the diesel range analytical results. There are no screening levels for comparison to results reported in the gasoline range, but rather individual constituents (e.g., BTEX) are evaluated.

The analyses for motor oil range organics only report results for >C28 to C35. Since the motor oil range analytical results only include hydrocarbons greater than C28, it is not appropriate to compare the results against screening levels for product types that have lower hydrocarbon ranges (e.g., diesel fuel – 60% C11-C22 aromatics and 40% C9-C18 aliphatics). The only product type in the NMED guidance that contains the >C28-C35 carbon range is "waste oil", which includes C19-C36. Therefore, the motor oil range soil analytical results are compared to the "waste oil" soil screening levels in NMED's Table 6-2.

Some of the individual constituents reported by the laboratory do not have screening levels but all were non-detect except 4-isopropyltoluene, n-butylbenzene, n-propylbenzene, and sec-butylbenzene. These constituents were detected at low concentrations in soils and mostly at depths associated with groundwater impacts.

Section 6 Site Impacts

This section discusses the chemical analyses performed and presents the analytical results that were obtained through the analysis of soil and groundwater samples, which were collected at the Group 9 SWMUs, SWMU No. 27, and soil samples that were previously collected from two soil borings (SWMU 3-1 and SWMU 3-3) completed as part of the SWMU No. 3 investigation. The analytical results for soils and groundwater are presented and compared to applicable screening levels, as described in Section 5.0.

6.1 Soil Sampling Chemical Analytical Results

Soil samples were analyzed by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico using the following methods for organic constituents:

- SW-846 Method 8260 volatile organic compounds;
- SW-846 Method 8270 semi-volatile organic compounds; and
- SW-846 Method 8015B gasoline, diesel, and motor oil range petroleum hydrocarbons.

Soil samples were analyzed for the following metals using the indicated analytical methods.

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.3/335.2 mod
Lead	SW-846 method 6010/6020
Tetraethyl Lead	SW-846 method 3546
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020

Analyte	Analytical Method
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020

The analytical results for soils are summarized in Table 6. The individual results that exceed the applicable screening levels are indicated using a bold font and/or are highlighted, as explained in the table footnotes. Maps showing the distribution of constituents detected in soils above screening levels are included as Figures 9 – 24. The concentrations shown on Figures 9 – 24 that exceed the screening levels in Table 6 are underlined on the figures (i.e., concentrations above residential and/or DAF (11.25) screening levels). The laboratory analytical reports are included in Appendix F and the data validation of the results, which includes the analytical results for the associated QA/QC samples, is included in Appendix G. The constituents that have concentrations in soils above screening levels are discussed below and are grouped by SWMU. The SWMU No. 27 area is addressed with the SWMU No. 13 samples.

SWMU No. 12 API Separator

Twelve soil samples were collected from three soil borings (SWMU 12-1, SWMU 12-2 and SWMU 12-3) that were completed near the API Separator. The analytical results for soil samples that contained concentrations of constituents above screening levels are summarized below.

Arsenic was detected in two soil samples [SWMU 12-2 (0'-0.5') and SWMU 12-2 (6'-8')] at concentrations (3.3 mg/kg and 3.4 mg/kg, respectively) slightly above the DAF screening level (0.168 mg/kg adjusted to 3.2 mg/kg for background) and both of these samples have concentrations below the residential screening level (4.25 mg/kg). The arsenic analytical results are shown on Figure 9.

1,2,4-Trimethylbenzene was found in one soil sample [SWMU 12-3 (26'-28')] at a concentration (5.5 mg/kg) that is above the DAF screening level of 0.27 mg/kg. The reported values for 1,2,4-trimethylbenzene are presented in Figure 13. 1,3,5-Trimethylbenzene was found in the same soil sample [SWMU 12-3 (26'-28')] at a concentration (2.1 mg/kg) above the DAF screening level of 0.225 mg/kg. The reported values for 1,3,5-trimethylbenzene are presented in Figure 14.

1-Methylnaphthalene was detected in four samples [SWMU 12-2 (6'-8'), SWMU 12-3 (0.5'-2'), SWMU 12-3 (2'-4'), and SWMU 12-3 (26'-28')] at concentrations of 8.6 mg/kg, 11.0 mg/kg, 0.56 mg/kg,

and 2.2 mg/kg, respectively, which exceed the DAF screening level of 0.169 mg/kg. None of the samples have results above the residential screening level of 22 mg/kg. The analytical results are shown in Figure 15.

One soil sample [SWMU 12-3 (26-28')] indicated the presence of ethylbenzene above the DAF screening level of 0.148 mg/kg at a concentration of 0.52 mg/kg. None of the ethylbenzene concentrations exceed the residential screening level of 75.1 mg/kg. Figure 18 shows the analytical results for ethylbenzene.

Naphthalene was found in two soil samples [SWMU 12-2 (6'-8') and SWMU 12-3 (26'-28')] at concentrations above the DAF screening level of 0.0463 mg/kg. The reported concentrations for these two samples are 1.3 and 1.2 mg/kg. The reported values for naphthalene are presented in Figure 20 and none exceed the residential screening level of 49.7 mg/kg.

One soil sample [SWMU 12-3 (26-28')] indicated the presence of xylenes above the DAF screening level of 1.68 mg/kg at a concentration of 3.3 mg/kg. None of the xylenes concentrations exceed the residential screening level of 871 mg/kg. Figure 22 shows the analytical results for xylenes.

One soil sample [SWMU 12-3 (0.5'-2')] indicated the presence of 2-methylnaphthalene above the DAF screening level of 10.1 mg/kg at a concentration of 11.0 mg/kg. None of the 2-methylnaphthalene concentrations exceed the residential screening level of 310 mg/kg. Figure 16 shows the analytical results for 2-methylnaphthalene.

Diesel range organics (DRO) were detected in four samples [SWMU 12-2 (0'-0.5'), SWMU 12-2 (0.5'-2'), SWMU 12-2 (6'-8'), and SWMU 12-3 (0.5'-2')] at concentrations of 2,800 mg/kg, 3,400 mg/kg, 1,300 mg/kg, and 2,000 mg/kg, respectively, which exceed the residential screening level of 1,000 mg/kg. The analytical results are shown in Figure 23.

Other constituents detected, but at concentrations below all applicable screening levels, include barium, beryllium, cadmium, chromium, cobalt, lead, nickel, vanadium, zinc, mercury, acetone, carbon disulfide, n-propylbenzene, phenanthrene, gasoline range organics, diesel range organics, and motor oil range organics. The reported values are presented in Table 6.

SWMU No. 13 Process Area.

Seventy eight soil samples were collected from eighteen soil borings (SWMU 13-1 through SWMU 13-19, excluding SWMU 13-9) and eleven surface soil sample locations (SWMU 13-20 through SWMU

13-30) throughout the Process Area. In addition, two soil borings (SWMU 3-1 and SWMU 3-3) were previously installed near the western portion of the Process Area as part of the SWMU No. 3 (Underground Piping Currently in Use) investigation and these analytical results are included in Table 6 and in this review of the SWMU No. 13 analytical results. The analytical results for soil samples that contained concentrations of constituents above screening levels are summarized below.

Arsenic was detected in 31 soils samples at concentrations above the adjusted soil DAF screening level. As explained in Section 5.0 the arsenic DAF was adjusted upward to the background concentration of 3.2 mg/kg. The samples with concentrations exceeding the DAF screening level include [SWMU 3-3 (26'-27'), SWMU 13-2 (0.5'-2'), SWMU 13-5 (0'-0.5'), SWMU 13-5 (10'-12'), SWMU 13-6 (0.5'-2'), SWMU 13-6 (10'-12'), SWMU 13-7 (0'-0.5'), SWMU 13-8 (0.5'-2'), SWMU 13-10 (0'-0.5'), SWMU 13-11 (0.5'-2'), SWMU 13-13 (0.5'-2'), SWMU 13-14 (0.5'-2'), SWMU 13-14 (2'-4'), SWMU 13-15 (0'-0.5'), SWMU 13-15 (0.5'-2'), SWMU 13-16 (0'-0.5'), SWMU 13-16 (0.5'-2'), SWMU 13-17 (0'-0.5'), SWMU 13-17 (0.5'-2'), SWMU 13-17 (6'-8'), SWMU 13-18 (0'-0.5'), SWMU 13-18 (0.5'-2'), SWMU 13-19 (12'-14'), SWMU 13-20 (0'-0.5'), SWMU 13-21 (0'-0.5'), SWMU 13-22 (0'-0.5'), SWMU 13-25 (0'-0.5'), SWMU 13-27 (0'-0.5'), SWMU 13-28 (0'-0.5'), SWMU 13-29 (0'-0.5'), and SWMU 13-30 (0'-0.5')]. In addition, fifteen soil samples [SWMU 13-6 (0.5'-2'), SWMU 13-7 (0'-0.5'), SWMU 13-10 (0'-0.5'), SWMU 13-14 (2'-4'), SWMU 13-15 (0'-0.5'), SWMU 13-15 (0.5'-2'), SWMU 13-16 (0'-0.5'), SWMU 13-17 (0'-0.5'), SWMU 13-18 (0'-0.5'), SWMU 13-21 (0'-0.5'), SWMU 13-22 (0'-0.5'), SWMU 13-25 (0'-0.5'), SWMU 13-27 (0'-0.5'), SWMU 13-28 (0'-0.5'), and SWMU 13-29 (0'-0.5')] have concentrations above the residential screening level of 4.25 mg/kg. The detected concentrations of arsenic ranged from 2.8 mg/kg to 22 mg/kg and the reported results are shown on Figure 9.

Cobalt was detected in nine soil samples [SWMU 13-1 (12'-14'), SWMU 13-6 (24'-26'), SWMU 13-7 (0.5'-2'), SWMU 13-7 (2'-4'), SWMU 13-15 (12'-14'), SWMU 13-15 (24'-26'), SWMU 13-18 (12'-14'), SWMU 13-21 (0'-0.5') and SWMU 13-22 (0'-0.5')] at concentrations above the DAF screening level of 5.51 mg/kg but none exceed the residential screening level of 23.0 mg/kg. The detected concentrations range from 1.3 mg/kg to 7.4 mg/kg and the reported results are shown on Figure 10.

Mercury was detected in nine soil samples [SWMU 13-7 (0'-0.5'), SWMU 13-10 (0'-0.5'), SWMU 13-11 (0'-0.5'), SWMU 13-13 (0'-0.5'), SWMU 13-17 (0'-0.5'), SWMU 13-20 (0'-0.5'), SWMU 13-21 (0'-0.5'), SWMU 13-22 (0'-0.5'), and SWMU 13-25 (0'-0.5')] at concentrations above the DAF screening level of 0.368 mg/kg, but all reported concentrations are below the residential screening level of

23.8 mg/kg. The detected concentrations range from 0.038 mg/kg to 5.8 mg/kg. Figure 11 presents the reported concentrations.

Cyanide was detected in two soil samples [SWMW 13-12 (0'-0.5') and SWMU 13-17 (0'-0.5')] at concentrations of 0.33 mg/kg and 0.241 mg/kg, respectively, both of which exceed the DAF screening level of 0.00294 mg/kg. Neither result exceeds the residential screening level of 11.2 mg/kg. The reported values are shown on Figure 12.

Twenty-three soil samples [SWMU 3-3 (24'-26'), SWMU 3-3 (26'-27'), SWMU 13-1 (12'-14'), SWMU 13-1 (26'-28'), SWMU 13-2 (24'-26'), SWMU 13-2 (26'-28') SWMU 13-3 (4'-6'), SWMU 13-3 (26'-28'), SWMU 13-5 (10'-12'), SWMU 13-5 (24'-26'), SWMU 13-7 (0.5'-2'), SWMU 13-7 (2'-4'), SWMU 13-7 (22'-24'), SWMU 13-8 (0.5'-2'), SWMU 13-8 (24'-26'), SWMU 13-11 (0.5'-2'), SWMU 13-11 (26'-28'), SWMU 13-12 (24'-26'), SWMU 13-14 (0.5'-2'), SWMU 13-15 (12'-14'), SWMU 13-15 (14'-16'), SWMU 13-15 (24'-26'), and SWMU 13-19 (26'-28')] have detected concentrations of 1,2,4-trimethylbenzene above the DAF screening level of 0.27 mg/kg. The detected concentrations range from 0.00238 mg/kg to 200 mg/kg and one sample [SWMU 13-3 (4'-6')] exceeds the residential screening level of 67 mg/kg with a concentration of 200 mg/kg. The reported concentrations of 1,2,4-trimethylbenzene are shown on Figure 13.

Fourteen soil samples [SWMU 3-3 (26'-27'), SWMU 13-1 (12'-14'), SWMU 13-1 (26'-28'), SWMU 13-2 (26'-28') SWMU 13-3 (4'-6'), SWMU 13-3 (26'-28'), SWMU 13-5 (10'-12'), SWMU 13-5 (24'-26'), SWMU 13-7 (0.5'-2'), SWMU 13-7 (2'-4'), SWMU 13-7 (22'-24'), SWMU 13-11 (0.5'-2'), SWMU 13-15 (12'-14'), and SWMU 13-15 (14'-16')] have detected concentrations of 1,3,5-trimethylbenzene above the DAF screening level of 0.225 mg/kg. Detected values range from 0.00295 mg/kg to 67 mg/kg and one sample [SWMU 13-3 (4'-6')] exceeds the residential screening level of 47 mg/kg with a concentration of 67 mg/kg. The reported concentrations of 1,3,5-trimethylbenzene are shown on Figure 14.

Twenty-seven soil samples [SWMU 3-3 (24'-26'), SWMU 3-3 (26'-27'), SWMU 13-1 (26'-28'), SWMU 13-2 (24'-26'), SWMU 13-2 (26'-28') SWMU 13-3 (4'-6'), SWMU 13-3 (26'-28'), SWMU 13-4 (24'-26'), SWMU 13-5 (10'-12'), SWMU 13-5 (24'-26'), SWMU 13-6 (24'-26'), SWMU 13-7 (22'-24'), SWMU 13-8 (22'-24'), SWMU 13-8 (24'-26'), SWMU 13-10 (24'-26'), SWMU 13-10 (26'-28'), SWMU 13-11 (26'-28'), SWMU 13-12 (24'-26'), SWMU 13-13 (24'-26'), SWMU 13-14 (26'-28'), SWMU 13-15 (12'-14'), SWMU 13-15 (14'-16'), SWMU 13-15 (24'-26'), SWMU 13-16 (26-28'), SWMU 13-17 (24'-26'), SWMU 13-18 (24'-26'), and SWMU 13-19 (26'-28')] had detected concentrations of 1-

methylnaphthalene above the DAF screening level of 0.169 mg/kg. The detected values range from 0.0142 mg/kg to 35 mg/kg, and one sample [SWMU 13-5 (24'-26')] exceeds the residential screening level of 22 mg/kg with a concentration of 35 mg/kg. The reported concentrations of 1-methylnaphthalene are shown on Figure 15.

Six soil samples [SWMU 13-3 (26'-28'), SWMU 13-5 (24'-26'), SWMU 13-7 (22'-24'), SWMU 13-8 (24'-26'), SWMU 13-11 (26'-28'), and SWMU 13-17 (24'-26')] have detected concentrations of 2-methylnaphthalene above the DAF screening level of 10.1 mg/kg. Detected values range from 0.0233 mg/kg to 57 mg/kg and no samples exceed the residential screening level of 220 mg/kg. The reported concentrations of 2-methylnaphthalene are shown on Figure 16.

Nine soil samples [SWMU 13-1 (12'-14'), SWMU 13-3 (4'-6'), SWMU 13-4 (24'-26'), SWMU 13-7 (0.5'-2'), SWMU 13-7 (2'-4'), SWMU 13-8 (0.5'-2'), SWMU 13-8 (24'-26'), SWMU 13-14 (0.5'-2'), and SWMU 13-14 (26'-28')] have detected concentrations of benzene above the DAF screening level of 0.0214 mg/kg. The detected values range from 0.00161 mg/kg to 2.2 mg/kg, and no samples exceed the residential screening level of 17.8 mg/kg. The reported concentrations of benzene are shown on Figure 17.

Chloroform was detected in only one soil sample [SWMU 3-3 (3.5'-4.5')] and this sample was collected as part of the earlier investigation of SWMU No. 3. The reported concentration of 0.062 mg/kg exceeds the DAF screening level of 0.00614 mg/kg.

Twenty-one soil samples [SWMU 3-3 (24'-26'), SWMU 13-1 (12'-14'), SWMU 13-1 (26'-28'), SWMU 13-2 (26'-28') SWMU 13-3 (4'-6'), SWMU 13-3 (26'-28'), SWMU 13-5 (10'-12'), SWMU 13-5 (24'-26'), SWMU 13-7 (0.5'-2'), SWMU 13-7 (2'-4'), SWMU 13-8 (0.5'-2'), SWMU 13-8 (22'-24'), SWMU 13-8 (24'-26'), SWMU 13-11 (0.5'-2'), SWMU 13-11 (26'-28'), SWMU 13-14 (0.5'-2'), SWMU 13-14 (26'-28'), SWMU 13-15 (12'-14'), SWMU 13-15 (14'-16'), SWMU 13-15 (24'-26'), and SWMU 13-17 (24'-26')] have detected concentrations of ethylbenzene above the DAF screening level of 0.148 mg/kg. The detected values range from 0.001791 mg/kg to 31 mg/kg, and no samples exceed the residential screening level of 75.1 mg/kg. The reported concentrations of ethylbenzene are shown on Figure 18.

Twenty-seven soil samples [SWMU 3-3 (24'-26'), SWMU 3-3 (26'-27'), SWMU 13-1 (26'-28'), SWMU 13-2 (24'-26'), SWMU 13-2 (26'-28'), SWMU 13-3 (4'-6'), SWMU 13-3 (26'-28'), SWMU 13-4 (6'-8'), SWMU 13-5 (10'-12'), SWMU 13-5 (24'-26'), SWMU 13-7 (22'-24'), SWMU 13-8 (22'-24'), SWMU 13-8

8~(24'-26'), SWMU 13-10 (24'-26'), SWMU 13-10 (26'-28'), SWMU 13-11 (0.5'-2'), SWMU 13-11 (26'-28'), SWMU 13-13 (24'-26'), SWMU 13-14 (0.5'-2'), SWMU 13-14 (26'-28'), SWMU 13-15 (12'-14'), SWMU 13-15 (14'-16'), SWMU 13-15 (24'-26'), SWMU 13-16 (26-28'), SWMU 13-17 (24'-26'), SWMU 13-18 (24'-26'), and SWMU 13-19 (26'-28')] have detected concentrations of naphthalene above the DAF screening level of 0.0463 mg/kg. The detected values range from 0.00269 mg/kg to 20 mg/kg and no samples exceed the residential screening level of 49.7 mg/kg. The reported concentrations of naphthalene are shown on Figure 20.

Two soil samples [SWMU 13-1 (12'-14') and SWMU 13-3 (4'-6')] have detected concentrations of toluene above the DAF screening level of 6.83 mg/kg. The detected values range from 0.00203 mg/kg to 45 mg/kg and no samples exceed the residential screening level of 5,230 mg/kg. The reported concentrations of toluene are shown on Figure 21.

Twelve soil samples [SWMU 13-1 (12'-14'), SWMU 13-1 (26'-28'), SWMU 13-2 (26'-28') SWMU 13-3 (4'-6'), SWMU 13-3 (26'-28'), SWMU 13-5 (10'-12'), SWMU 13-5 (24'-26'), SWMU 13-7 (0.5'-2'), SWMU 13-7 (2'-4'), SWMU 13-8 (24'-26'), SWMU 13-15 (12'-14'), and SWMU 13-15 (14'-16')] have reported concentrations of xylenes above the DAF screening level of 1.68 mg/kg. The detected values range from 0.00269 mg/kg to 20 mg/kg and no samples exceed the residential screening level of 871 mg/kg. The reported concentrations of xylenes are shown on Figure 22.

Fifteen soil samples [SWMU 13-1 (12'-14'), SWMU 13-3 (26'-28'), SWMU 13-5 (10'-12'), SWMU 13-5 (24'-26'), SWMU 13-7 (0.5'-2'), SWMU 13-7 (2'-4'), SWMU 13-7 (22'-24'), SWMU 13-8 (0.5'-2'), SWMU 13-8 (22'-24'), SWMU 13-8 (24'-26'), SWMU 13-11 (0.5'-2'), SWMU 13-11 (26'-28'), SWMU 13-13 (24'-26'), SWMU 13-14 (26'-28'), and SWMU 13-19 (26'-28')] have detected concentrations of DRO above the residential screening level of 1,000 mg/kg. The detected values range from 13 mg/kg to 12,000 mg/kg. The reported concentrations of DRO are shown on Figure 23.

Two soil samples [SWMU 13-7 (0.5'-2') and SWMU 13-7 (2'-4')] have detected concentrations of MRO above the residential screening level of 3,000 mg/kg. The detected values range from 58 mg/kg to 6,100 mg/kg. The reported concentrations of MRO are shown on Figure 24.

SWMU No. 14 Tanks 3, 4 and 5

Twenty soil samples were collected from five soil borings located around Tanks 3, 4, and 5. This includes borings SWMU 14-1 through SWMU 14-5.

Arsenic was detected in four soil samples [SWMU 14-1 (0'-0.5'), SWMU 14-3 (0'-0.5'), SWMU 14-3 (0'-0.5'), SWMU 14-3 (0.5'-2.0') and SWMU 14-4 (0'-0.5')] at concentrations above the DAF screening level (0.168 mg/kg adjusted to 3.2 mg/kg for background) and two of these samples [SWMU 14-3 (0'-0.5') and SWMU 14-3 (0.5'-2.0')] have concentrations above the residential screening level of 4.25 mg/kg. The detected concentrations range from 2.8 mg/kg to 6.4 mg/kg. The arsenic analytical results are shown on Figure 9.

Cobalt was detected in three soil samples [SWMU 14-3 (0'-0.5'), SWMU 14-3 (0.5'-2.0') and SWMU 14-4 (6'-8')] at concentrations above the DAF screening level of 5.51 mg/kg but none exceed the residential screening level of 23.0 mg/kg. The detected concentrations range from 2.2 mg/kg to 6.9 mg/kg. The cobalt analytical results are shown on Figure 10.

Eight soil samples [SWMU 14-1 (18'-20'), SWMU 14-2 (18'-20'), SWMU 14-2 (20'-22'), SWMU 14-3 (0.5'-2.0'), SWMU 14-3 (4'-6'), SWMU 14-3 (14'-16'), SWMU 14-5 (16'-18'), and SWMU 14-5 (26'-28')] have detected concentrations of 1,2,4-trimethylbenzene above the DAF screening level of 0.27 mg/kg. The detected concentrations ranged from 0.0139 mg/kg to 170 mg/kg and one sample [SWMU 14-5 (26'-28')] exceed the residential screening level of 67 mg/kg with a concentration of 170 mg/kg. The reported concentrations of 1,2,4-trimethylbenzene are shown on Figure 13.

Five soil samples [SWMU 14-3 (0.5'-2.0'), SWMU 14-3 (4'-6'), SWMU 14-3 (14'-16'), SWMU 14-5 (16'-18'), and SWMU 14-5 (26'-28')] have detected concentrations of 1,3,5-trimethylbenzene above the DAF screening level of 0.225 mg/kg. Detected values range from 0.00497 mg/kg to 51 mg/kg and one sample [SWMU 14-5 (26'-28')] exceeds the residential screening level of 47 mg/kg with a concentration of 51 mg/kg. The reported concentrations of 1,3,5-trimethylbenzene are shown on Figure 14.

Nine soil samples [SWMU 14-1 (18'-20'), SWMU 14-2 (18'-20'), SWMU 14-2 (20'-22'), SWMU 14-3 (0.5'-2.0'), SWMU 14-3 (4'-6'), SWMU 14-3 (14'-16'), SWMU 14-4 (18'-20'), SWMU 14-5 (16'-18'), and SWMU 14-5 (26'-28')] have detected concentrations of 1-methylnaphthalene above the DAF screening level of 0.169 mg/kg. The detected values range from 0.00604 mg/kg to 26 mg/kg, and one sample [SWMU 14-5 (26'-28')] exceeds the residential screening level of 22 mg/kg with a concentration of 26 mg/kg. The reported concentrations of 1-methylnaphthalene are shown on Figure 15.

Two soil samples [SWMU 14-2 (20'-22') and SWMU 14-5 (26'-28')] have detected concentrations of 2-methylnaphthalene above the DAF screening level of 10.1 mg/kg. Detected values range from 0.0117 mg/kg to 51 mg/kg and no samples exceed the residential screening level of 220 mg/kg. The reported concentrations of 2-methylnaphthalene are shown on Figure 16.

Four soil samples [SWMU 14-2 (20'-22'), SWMU 14-3 (0.5'-2.0'), SWMU 14-5 (16'-18'), and SWMU 14-5 (26'-28')] have detected concentrations of benzene above the DAF screening level of 0.0214 mg/kg. The detected values range from 0.00169 mg/kg to 9.5 mg/kg, and no samples exceed the residential screening level of 17.8 mg/kg. The reported concentrations of benzene are shown on Figure 17.

Eight soil samples [SWMU 14-1 (18'-20'), SWMU 14-2 (18'-20'), SWMU 14-2 (20'-22'), SWMU 14-3 (0.5'-2.0'), SWMU 14-3 (4'-6'), SWMU 14-3 (14'-16'), SWMU 14-5 (16'-18'), and SWMU 14-5 (26'-28')] have detected concentrations of ethylbenzene above the DAF screening level of 0.148 mg/kg. The detected values range from 0.00414 mg/kg to 100 mg/kg, and one sample [SWMU 14-5 (26'-28'] has a concentration that exceeds the residential screening level of 75.1 mg/kg with a value of 100 mg/kg. The reported concentrations of ethylbenzene are shown on Figure 18.

Isopropylbenzene (cumene) was detected in one soil sample [SWMU 14-5 (26-28')] at a concentration of 12 mg/kg, which exceeds the DAF screening level of 6.4 mg/kg, but is below the residential screening level of 2,360 mg/kg. The detected concentrations range from 0.061 mg/kg to 12 mg/kg. The analytical results for isopropylbenzene are presented on Figure 19.

Nine soil samples [SWMU 14-1 (18'-20'), SWMU 14-2 (18'-20'), SWMU 14-2 (20'-22'), SWMU 14-3 (0.5'-2.0'), SWMU 14-3 (4'-6'), SWMU 14-3 (14'-16'), SWMU 14-4 (18'-20'), SWMU 14-5 (16'-18'), and SWMU 14-5 (26'-28')] have reported concentrations of naphthalene above the DAF screening level of 0.0463 mg/kg. The detected values range from 0.00199 mg/kg to 27 mg/kg and no samples exceed the residential screening level of 49.7 mg/kg. The reported concentrations of naphthalene are shown on Figure 20.

Toluene was detected in one soil sample [SWMU 14-5 (26-28')] at a concentration of 55 mg/kg, which exceeds the DAF screening level of 6.83 mg/kg, but is below the residential screening level of 5,230 mg/kg. The detected concentrations range from 0.00216 mg/kg to 55 mg/kg. The analytical results for toluene are presented on Figure 21.

Five soil samples [SWMU 14-2 (20'-22'), SWMU 14-3 (4'-6'), SWMU 14-3 (14'-16'), SWMU 14-5 (16'-18'), and SWMU 14-5 (26'-28')] have reported concentrations of xylenes above the DAF screening level of 1.68 mg/kg. The detected values range from 0.00345 mg/kg to 310 mg/kg and no samples exceed the residential screening level of 871 mg/kg. The reported concentrations of xylenes are shown on Figure 22.

DRO was detected in two soil samples [SWMU 14-5 (16'-18') and SWMU 14-5 (26'-28')] at concentrations of 2,800 mg/kg and 6,200 mg/kg, respectively, which exceed the residential screening level of 1,000 mg/kg. The detected concentrations range from 17 mg/kg to 6,200 mg/kg. The reported concentrations of DRO are shown on Figure 23.

6.2 Nitrogen Oxides (NO_x)

The groundwater samples were analyzed for organic constituents by the following methods:

- SW-846 Method 8260 volatile organic compounds;
- SW-846 Method 8270 semi-volatile organic compounds; and
- SW-846 Method 8015B gasoline, diesel, and motor oil range organics.

Groundwater samples were analyzed for the following metals using the indicated analytical methods.

Analyte	Analytical Method
Antimony	EPA method 200.8
Arsenic	EPA method 200.8
Barium	EPA method 200.7
Beryllium	EPA method 200.7
Cadmium	EPA method 200.7
Chromium	EPA method 200.7
Chromium VI	EPA method 3500C
Cobalt	EPA method 200.7
Cyanide	EPA method 335.4
Lead	EPA method 200.8
Mercury	EPA method 7470/7471
Nickel	EPA method 200.7
Selenium	EPA method 200.8
Silver	EPA method 200.7

Analyte	Analytical Method
Vanadium	EPA method 200.7
Zinc	EPA method 200.7

In addition, groundwater samples were analyzed for the following general chemistry parameters.

Analyte	Analytical Method
Total Dissolved Solids	Method SM 2540
Bicarbonate	SM 2320B
Carbonate ¹	SM 2320B
Alkalinity (as CaCO3)1	SM 2320B
Chloride	EPA method 300.0
Sulfate	EPA method 300.0
Calcium	EPA method 200.7
Magnesium	EPA method 200.7
Sodium	EPA method 200.7
Potassium	EPA method 200.7
Manganese	EPA method 200.7
Nitrate/nitrite	EPA method 300.0
Iron (total & dissolved)	EPA method 200.7

¹Additional constituent not required per the March 2012 Investigation Work Plan

The groundwater analyses were completed as approved in the site investigation work plan with only a few of exceptions as noted in the table above and discussed below. The groundwater samples collected from MW-75 (located near the former tetraethyl lead building) were not analyzed for tetraethyl lead. Tetraethyl lead was not detected in the overlying soils in this areas. The work plan listed analyses for ferric/ferrous iron but the lab reported total and dissolved iron. The laboratory reported iron by EPA method 200.7 Total Recoverable Metals, which represents the sum of both ferric and ferrous iron. In addition, the analyses include iron by EPA method 200.7 dissolved metals, which represents ferrous iron. Ferric iron can be calculated by subtracting the dissolved analytical result from the total recoverable result.

The analytical results and the applicable cleanup levels are presented in Table 7. The individual results that exceed the applicable cleanup levels are shown in a bold font. Maps depicting the distribution of the various constituents detected in groundwater samples above the screening levels are provided in Figures 25 – 32. The concentrations shown on Figures 25 – 32 that exceed the screening levels in Table 7 are underlined on the figures. The results for the associated QA/QC

samples and the data validation are provided in Appendix G. The laboratory analytical reports are included in Appendix F.

The detection of constituents in groundwater samples at concentrations above screening levels is discussed below. Separate phase hydrocarbon was found in MW-71 and MW-77, but groundwater samples were collected during the initial sampling event to provide qualitative information on the constituents present in groundwater at these locations. The reported concentrations for the groundwater samples collected at MW-71 and MW-77 may not reflect the true dissolved-phase concentrations and have been excluded from the discussion below. The sample results for MW-71 and MW-77 are included in Table 7 and are included on the groundwater figures (Figure 25 – Figure 32).

Arsenic (dissolved) was detected above the screening level (0.01 mg/l) at MW-75 at a maximum concentration of 0.02 mg/l, while total arsenic was detected above the screening level at MW-72, MW-73, MW-75, and MW-76. Detected concentrations for dissolved arsenic range from 0.014 mg/l to 0.02 mg/l and detected concentrations for total arsenic range from 0.011 mg/l to 0.028 mg/l. The reported concentrations for dissolved arsenic are shown on Figure 25.

Barium (dissolved) was detected at MW-72, MW-74, MW-75, and MW-76 at concentrations above the screening level (1.0 mg/l). The detected concentrations of dissolved barium range from 0.17 mg/l to 2.1 mg/l. Detected concentrations for total barium range from 0.55 mg/l to 2.9 mg/l, with concentrations above the total barium screening level of 2.0 mg/l found at MW-75 and MW-76. The reported barium (dissolved) concentrations are shown on Figure 25.

Iron (dissolved) was detected at MW-72, MW-73, MW-74, MW-75, and MW-76 at concentrations above the screening level (1.0 mg/l). The detected concentrations of dissolved iron range from 1.2 mg/l to 9.0 mg/l. Detected concentrations for total iron range from 5.2 mg/l to 50 mg/l, with concentrations above the total iron screening level of 13.8 mg/l found at MW-72, MW-73, MW-75, and MW-76. The reported dissolved iron concentrations are shown on Figure 25.

Detected concentrations for total lead range from 0.0042 mg/l to 0.034 mg/l, with concentrations above the total lead screening level of 0.015 mg/l found at MW-72, MW-73, and MW-75. The reported total lead concentrations are shown on Figure 26.

Manganese (dissolved) was detected at MW-72, MW-73, MW-74, MW-75, and MW-76 at concentrations above the screening level (0.2 mg/l). The detected concentrations of dissolved

manganese range from 1.8 mg/l to 4.4 mg/l. Detected concentrations for total manganese range from 2.4 mg/l to 5.0 mg/l, with concentrations above the total manganese screening level of 2.02 mg/l found at MW-72, MW-73, MW-74, MW-75, and MW-76. The reported dissolved manganese concentrations are shown on Figure 26.

Detected concentrations for total vanadium range from 0.051 mg/l to 0.066 mg/l, with concentrations above the total vanadium screening level of 0.0631 mg/l found at MW-75. The reported total vanadium concentrations are shown on Figure 26.

1,2,4-trimethylbenzene was detected at MW-72, MW-73, MW-74, MW-75, and MW-76 at concentrations above the screening level (0.015 mg/l). The detected concentrations of 1,2,4-trimethylbenzene range from 0.22 mg/l to 2.0 mg/l. The reported 1,2,4-trimethylbenzene concentrations are shown on Figure 27.

The reported concentrations for 1,2-dichloroethane exceed the screening level of 0.005 mg/l in one groundwater sample collected at MW-73. All other groundwater samples were non-detect for 1,2-dichloroethane. The reported analytical results are shown on Figure 27.

1,3,5-trimethylbenzene was detected at MW-72, MW-73, MW-74, MW-75, and MW-76 at concentrations above the screening level (0.012 mg/l). The detected concentrations of 1,3,5-trimethylbenzene range from 0.034 mg/l to 0.470 mg/l. The reported 1,3,5-trimethylbenzene concentrations are shown on Figure 27.

1-methylnaphthalene was detected at MW-72, MW-73, MW-74, MW-75, and MW-76 at concentrations above the screening level (0.0023 mg/l). The detected concentrations of 1-methylnaphthalene range from 0.046 mg/l to 0.12 mg/l. The reported 1-methylnaphthalene concentrations are shown on Figure 28.

2-methylnaphthalene was detected at MW-76 at a concentration (0.2 mg/l) above the screening level (0.15 mg/l). The detected concentrations of 2-methylnaphthalene range from 0.036 mg/l to 0.2 mg/l. The reported 2-methylnaphthalene concentrations are shown on Figure 28.

The reported concentrations for aniline exceed the screening level of 0.012 mg/l in both groundwater samples collected at MW-72 and one groundwater sample collected from MW-75 at concentrations of 0.032 mg/l and 0.02 mg/l, respectively. The detected concentrations range from 0.01 mg/l to 0.032 mg/l. The reported analytical results are shown on Figure 28.

Benzene was detected at MW-72, MW-73, MW-74, MW-75, and MW-76 at concentrations above the screening level (0.005 mg/l). The detected concentrations of benzene range from 0.72 mg/l to 15.0 mg/l. The reported benzene concentrations are shown on Figure 29.

The reported concentrations for ethylbenzene exceed the screening level of 0.7 mg/l in one groundwater sample collected at MW-72 and the groundwater sample collected from MW-74 at concentrations of 0.87 mg/l and 2.4 mg/l, respectively. The detected concentrations of ethylbenzene range from 0.21 mg/l to 2.4 mg/l. The reported analytical results are shown on Figure 29.

Methyl tert-butyl ether (MTBE) was detected in one groundwater sample collected at MW-74 at a concentration of 0.84 mg/l, which exceeds the screening level (0.143 mg/l). The detected concentrations of MTBE range from 0.036 mg/l to 0.84 mg/l. The reported MTBE concentrations are shown on Figure 29.

Naphthalene was detected at MW-72, MW-73, MW-74, MW-75, and MW-76 at concentrations above the screening level (0.00165 mg/l). The detected concentrations of naphthalene range from 0.06 mg/l to 0.42 mg/l. The reported naphthalene concentrations are shown on Figure 30.

The reported concentrations for toluene exceed the screening level of 0.75 mg/l in one groundwater sample collected at MW-74 (12.0 mg/l). The detected concentrations of toluene range from 0.032 mg/l to 12.0 mg/l. The reported analytical results are shown on Figure 30.

Xylenes were detected at MW-72, MW-73, MW-74, and MW-75 at concentrations above the screening level (0.62 mg/l). The detected concentrations of xylenes range from 0.041 mg/l to 9.4 mg/l. The reported xylenes concentrations are shown on Figure 30.

The reported concentrations for bis(2-ethylhexyl) phthalate exceed the screening level of 0.006 mg/l in one groundwater sample collected at MW-72 and one groundwater sample collected from MW-75 at concentrations of 0.021 mg/l and 0.016 mg/l, respectively. The detected concentrations of bis(2-ethylhexyl) phthalate range from 0.016 mg/l to 0.021 mg/l. The reported analytical results are shown on Figure 31.

Chloride was detected at MW-73, MW-74, MW-75, and MW-76 at concentrations above the screening level (250 mg/l). The detected concentrations of chloride range from 180 mg/l to 390 mg/l. The reported chloride concentrations are shown on Figure 32.

Total dissolved solids (TDS) were detected at MW-72, MW-73, MW-74, MW-75, and MW-76 at concentrations above the screening level (1,000 mg/l). The detected concentrations of TDS range from 1,490 mg/l to 2,000 mg/l. The reported TDS concentrations are shown on Figure 32.

6.3 General Groundwater Chemistry

The measurement of field purging parameters included measurement of groundwater pH, specific conductance, dissolved oxygen concentrations, oxidation-reduction potential, and temperature. The results of the measurements are included in Table 10 and fluid levels measured prior to purging are presented in Table 11.

Section 7 Conclusions and Recommendations

This section summarizes and provides an evaluation of the potential impacts as shown in field screening data and analytical data. An investigation of soils and groundwater was conducted at Group 9 (SWMU Nos. 12, 13 and 14) and SWMU No. 27 to assess and evaluate the presence, nature, extent, fate, and transport of contaminants. To accomplish this objective, soil and groundwater samples were collected and analyzed for potential site-related constituents.

7.1 Conclusions

SWMU No. 12 API Separator

Three soil borings (SWMU 12-1, SWMU 12-2 and SWMU 12-3) were completed near the API Separator. A total of 12 soil samples were collected from this area. Arsenic was the only metal detected above the screening level in two samples [SWMU 12-2 (0'-0.5') and SWMU 12-2 (6'-8')] at concentrations slightly above the DAF screening level, which was adjusted for background concentrations.

Seven organic constituents (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, ethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, and xylenes) were found in soils at concentrations above their respective DAF screening levels. None of these constituents were detected at concentrations above the direct contact screening levels. Four of these seven constituents (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, ethylbenzene, and xylenes) were only detected in a single soil sample [SWMU 12-3 (26'-28')], which was collected just above the depth of saturation and may be associated with impacts from lateral migration of contaminated groundwater to this location rather than a surface soil source for these constituents. 1-Methylnaphthalene was detected in three soil samples closer to the land surface at SWMU 12-3, 2-methylnaphthalene was detected in two soil samples closer to the land surface at SWMU 12-2 and SWMU 12-2 and SWMU 12-3, and naphthalene was detected closer to the land surface at SWMU 12-2 at concentrations above the DAF screening level suggesting a potential soil source at these locations for these three constituents. The highest concentrations of these three constituents and elevated PID readings were measured on the south side of the API Separator in boring SWMU 12-2 at a depth of 6 feet to 8 feet. While elevated PID readings occur in all three borings, only the readings at SWMU

12-3 are significantly elevated and this occurs throughout the depth of the boring. None of the detected concentrations indicate the presence of any recent releases; however, the detections and PID readings at SWMU 12-3 show the strongest evidence of a historical release.

Diesel range organics were detected above the residential screening level in four soil samples. Three of these samples were collected on the south side of the API Separator at SWMU 12-2 and the fourth at SWMU 12-3, to the northwest of the API Separator. No new wells were installed around the API Separator as monitoring wells were previously existing in this area.

SWMU No. 13 Process Area.

Soil samples were collected from eighteen soil borings (SWMU 13-1 through SWMU 13-19, excluding SWMU 13-9) and eleven surface soil sample locations (SWMU 13-20 through SWMU 13-30) throughout the Process Area. Seven new monitoring wells (MW-71 through MW-77) were installed throughout the Process Area. In addition, the data from two soil borings (SWMU 3-1 and SWMU 3-3), which were previously installed near the western portion of the Process Area as part of the SWMU No. 3 (Underground Piping Currently in Use) investigation, is included in the evaluation of environmental conditions in the Process Area.

While arsenic was detected in 31 soils samples at concentrations above the adjusted soil DAF screening level, it was only significantly elevated in three areas. This includes surface soils near the former location of the electrostatic precipitator where fines were handled, the location where catalysts were handled at the former reformer unit, and near the area where catalysts were handled at the former FCC Unit. Arsenic was also significantly elevated in one subsurface soil sample [SWMU 3-3 (26'-27')]; however, it was not detected in three shallower soil samples in the same boring and there are no known sources of arsenic in this area that could potentially explain this elevated concentration, particularly at this depth. Its presence at 26 feet below the land surface should not pose any significant risk to human health or the environment.

Cobalt was detected at concentrations above the DAF screening level nine soil samples with a maximum of only 7.4 mg/kg in comparison to a DAF screening level of 5.51 mg/kg and site-specific background concentration of 5.3 mg/kg. Five of the nine "elevated" results were found at depths of 12 feet or greater where the shallower soils do not exceed the screening level and may not have been impacted by site operations. The locations where cobalt was found above the screening level in surface soils correspond to the locations were catalysts were handled at the former Reformer and FCC Units.

Mercury was detected in nine soil samples at concentrations above only the DAF screening level; all were collected at the land surface (0'-0.5' interval). Some of the impacted samples were collected near known potential sources (e.g., former Reformer, FCC, and Cat Poly Units), but others appear to be more random in their occurrence. Cyanide was detected in two soil samples at concentrations above only the DAF screening level and both were also collected from 0 feet -0.5 feet. One of the samples with cyanide above the screening level also contained mercury above the screening level and was located near the former Gas Con Unit, while the other sample was located near the cooling tower. Cyanide was the only constituent detected above a screening level in the surface sample collected near the cooling tower.

Ten individual organic constituents (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, benzene, chloroform, ethylbenzene, naphthalene, toluene, and xylenes) and DRO and MRO were detected in soils above the screening levels near the former process units. The distribution of these constituents in soils is fairly consistent across SWMU No. 13 with most constituents detected above screening levels in many of the same soil samples. The samples with concentrations above the screening levels generally occur in three depth ranges, near the surface (e.g., 0 feet – 4 feet), a mid-depth interval (e.g., 12 feet – 14 feet), and near the depth of saturation (e.g., 22 feet – 26 feet). The impacts to surface and/or shallow soils occurs at SWMU 13-3, SWMU 13-7, SWMU 13-8, SWMU 13-11, and SWMU 13-14, with single detections above the screening levels of chloroform and naphthalene at SWMU 3-3 (3.5'-4.5') and SWMU 13-4 (6'-8'), respectively. The impacts to the mid-depth intervals were observed at SWMU 13-1 (12'-14'), SWMU 13-5 (10'-12'), and SWMU 13-15 (12'-14' and 14'-16'). These exceedances of the screening levels also correspond with increases in PID readings and appear to be associated with a lithologic change where more permeable sediments (e.g., silt and clayey silt) overlie less permeable sediments (e.g., silty clay).

The greatest number of samples with concentrations above the screening levels were collected from the interval near the depth of saturation. All soil borings that were drilled and sampled to the depth of saturation (SWMU 3-3 and SWMU 13-1 through SWMU 13-19, excluding SWMU 13-9) identified concentrations of constituents above the DAF screening level. This is to be expected due to the fact that a groundwater plume of hydrocarbons is present beneath SWMU No. 13 and the soil samples collected from the depth of saturation are impacted by the groundwater plume regardless of any individual potential surface soil sources of hydrocarbons. Significantly elevated PID readings that start at shallow depths and extend to the depth of saturation occur at SWMU 13-3 and SWMU 13-5.

Two of the monitoring wells (MW-71 and MW-77) were found to contain SPH. Groundwater samples were collected from these two wells during the first sampling event only to provide qualitative information on the constituents present in these areas. The groundwater samples collected at the other five wells (MW-72, MW-73, MW-74, MW-75, and MW-76) indicate impacts across SWMU No. 13 and these results are discussed below.

Metals and petroleum hydrocarbon constituents were found at concentrations above screening levels in all five of the monitoring wells (MW-72 through MW-76) without SPH. Some constituents (e.g., dissolved iron, dissolved manganese, total manganese, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, naphthalene, and 1-methylnaphthalene) were detected above their respective screening levels at all locations. Other constituents (e.g., dissolved arsenic, total arsenic, dissolved barium, total lead, total vanadium, 1,2-dichloroethane, 2-methylnaphthalene, aniline, ethylbenzene, MTBE, toluene, xylenes, bis (2-ethylhexyl) phthalate, chloride, and TDS) were detected in at least one location above the screening levels. Both chloride and TDS were detected in all samples and it is possible that the naturally occurring concentrations for these constituents may be higher than the screening levels used for comparison. Western has submitted a report documenting naturally occurring concentrations of these constituents, but NMED has not yet approved final background concentrations for these constituents (Western Refining Southwest, Inc., 2014).

There is a similarity between the organic constituents detected in soils above screening levels and the organic constituents detected in groundwater at SWMU #13. 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, benzene, ethylbenzene, naphthalene, toluene, and xylenes were detected above screening levels in both soils and ground water; however, chloroform was only detected above screening levels in soils and 1,2-dichloroethane, aniline, MTBE, and bis (2-ethylhexyl) phthalate were only detected above screening levels in groundwater.

SWMU No. 14 Tanks 3, 4 and 5

Five soil borings were completed around Tanks 3, 4, and 5. This includes borings SWMU 14-1 through SWMU 14-5. In the soil samples collected at these borings, only two metals (arsenic and cobalt) were detected in soils above screening levels, with two of the arsenic results above residential screening levels. The exceedances of the metal screening levels occur in five soil samples with four of the samples collected in the upper two feet at borings SWMU 14-1, SWMU 14-3, and SWMU 14-4.

Ten organic constituents (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, benzene, ethylbenzene, isopropylbenzene, naphthalene, toluene, and xylenes) and DRO were detected at concentrations above the screening levels. Only two samples that were collected near the land surface [SWMU 14-3 (0.5'-2.0') and SWMU 14-3 (4'-6')] have concentrations above the organic screening levels, while all other detections above the screening levels occur at depths of 14 feet or greater and appear to be associated with impacts in the underlying groundwater. The PID readings are generally low throughout most of the vadose zone in borings SWMU 14-1, SWMU 14-2, SWMU 14-4, and SWMU 14-5, with a significant increase at or near the depth of saturation. Elevated PID readings occur throughout most of the boring at location SWMU 14-3, which is consistent with the exceedances of the screening levels in shallow and deeper soil samples collected at this location.

Cumulative Risk Evaluation

A cumulative risk evaluation for soils is presented in Table 8. This was conducted by taking the maximum reported concentration of each detected constituent from SWMUs 12, 13, 14, and 27 and dividing by the residential screening level and non-residential screening levels as shown in the equations below. These calculations are separated for carcinogenic and non-carcinogenic constituents. The cumulative carcinogenic risk is 9.8×10^{-5} assuming residential land use and 2.06×10^{-5} for non-residential land use. The hazard index for residential land use is 6.25 and for non-residential land use is 2.13.

Site Risk =
$$\left(\frac{conc_x}{SSL_x} + \frac{conc_y}{SSL_y} + \frac{conc_z}{SSL_z} + \dots + \frac{conc_i}{SSL_i}\right) \times 10^{-5}$$

$$Site\ Hazard\ Index\ (HI) = \left(\frac{conc_x}{SSL_x} + \frac{conc_y}{SSL_y} + \frac{conc_z}{SSL_z} + \dots + \frac{conc_i}{SSL_i}\right) \times 1$$

A cumulative risk evaluation for groundwater is presented in Table 9. This was conducted by taking the maximum reported concentration of each detected constituent (excluding wells MW-71 and MW-77) and dividing by the residential screening levels, as shown in the equation above in the discussion for soil. These calculations are separated for carcinogenic and non-carcinogenic constituents. The cumulative carcinogenic risk level is calculated to be 3.07 x 10-2 and the hazard index is 208.23.

7.2 Recommendations

Western has recently conducted an investigation of background locations and the site-specific background concentrations established for constituents in soil and groundwater should be considered before making any final determinations regarding exceedances of the screening levels. In particular, arsenic in soils and sulfate, TDS, iron (total), and manganese (dissolved) in groundwater may be affected.

Section 8 References

- Groundwater Technology Inc., 1994, RCRA Facility Investigation/Corrective Measures Study Report Bloomfield Refining Company #50 County Road 4990 Bloomfield, New Mexico, p.51.
- Western Refining Southwest, Inc., 2010, Groundwater Remediation and Monitoring Annual Report, Bloomfield Refinery Bloomfield New Mexico, p.37.
- Western Refining Southwest, Inc., 2014. Investigation Report Background Concentrations, Bloomfield Refinery Bloomfield, New Mexico, p. 26.

Tables

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Table 1 - Historical Groundwater Analytical Data Dissolved Metals Analytical Result Summary Bloomfield Refinery- Bloomfield, New Mexico

									Par	Parameters							
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Copper (mg/L) (lron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
Scre	Screening Level (mg/l)	0.01 2	1 1	0.0052	Ä	0.05	-1	-1	0.015 2	Ä	0.2 1	Ä	0.05	0.05	Ŋ	0.03	10 1
Well ID:	Date Sampled:																
	Aug-10	<0.02	3.2	<0.002	160	>0.006	>0.006	1.5	<0.005	54	2.1	4.6	<0.05	<0.005	520	<0.001	<0.05
0 7/0	Aug-09	<0.02	0.25	<0.002	140	>0.006	>0.006	2.3	0.007	39	2.2	2.9	<0.05	<0.005	450	<0.001	<0.05
6- M	Aug-08	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
	Aug-07	<0.020	2.5	<0.002	180	>0.006	>0.006	16.0	0.026	52	4.4	3.0	<0.25	<0.005	400	<0.10	0.084
	Aug-10	<0.02	0.048	<0.002	110	<0.006	<0.006	3.0	<0.005	86	0.56	7	<0.05	<0.005	1000	<0.001	<0.05
	Aug-09	NR¹	NR.	NR,	NR1	NR,	NR1	NR1	NR1	NR1	NR,	NR,	NR1	NR.	NR1	NR1	NR,
RW-18	Aug-08	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR,	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
	Ang-07	NR¹	NR¹	NR¹	NR¹	NR.	NR.	NR¹	NR1	NR¹	NR.	NR¹	NR¹	NR¹	NR¹	NR¹	NR.
	Aug-05	<0.02	0.038	<0.002	220	900.0>	>0.006	2	<0.005	64	4.1	4.4	<0.05	<0.005	200	<0.1	0.021
	Aug-10	<0.02	2.4	<0.002	140	>0.006	>0.006	11	900.0	58	6.1	8.2	<0.05	<0.005	220	<0.001	<0.05
D/M. 23	Ang-09	<0.02	1.3	<0.002	120	>0.006	>0.006	1.1	9800.0	52	4.6	6.8	<0.05	<0.005	200	<0.001	0.058
CZ- MA	Aug-08	<0.02	1.4	<0.002	110	>0.006	>0.006	2.9	0.013	47	4.6	6.3	<0.25	<0.005	170	<0.001	<0.05
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
	Aug-10	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
8C /VIQ	Ang-09	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
07-111	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW-39	Aug-04	<0.02	0.15	<0.002	290	>0.006	>0.006	0.18	<0.005	28	0.3	8.7	<0.05	<0.005	750	<0.10	<0.005
	Aug-10	<0.02	1.7	<0.002	100	<0.006	<0.006	4.6	<0.005	47	2.2	3.8	<0.05	<0.005	500	<0.001	<0.05
MW 40	Ang-09	<0.02	1.7	<0.002	98	>0.006	>0.006		<0.005	41	2.3	3.8	<0.05	<0.005	540	<0.001	0.057
2	Aug-08	<0.02	1.8	<0.002	91	>0.006	>0.006	2.5	<0.005	42	2.5	3.5	<0.25	<0.005	520	<0.001	0.063
	Aug-07	NR⁴	NR	NR¹	NR⁴	NR⁴	NR1	NR1	NR1	NR¹	NR ¹	NR¹	NR⁴	NR ¹	NR1	NR¹	NR¹
	Aug-10	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
DW 42	Ang-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹
74-147	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
		NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR,	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR,
MW-55		<0.02	2.5	<0.002	180	<0.006	>0.006	12	<0.005	4	6.8	11.0	<0.05	0.005	400	<0.001	<0.05
MW-58	Aug-10	<0.02	1.6	<0.002	150	<0.006	>0.006	8.9	0.0085	49	4.3	4.9	<0.05	<0.005	390	<0.001	<0.05

Table 1 - Historical Groundwater Analytical Data Dissolved Metals Analytical Result Summary Bloomfield Refinery- Bloomfield, New Mexico

									Par	Parameters							
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Copper (mg/L) (lron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
Scre	Screening Level (mg/l)	0.01 2	1 1	0.0052	Ä	0.05	-1	-1	0.015 2	Ä	0.2 1	Ä	0.05	0.05	Ŋ	0.03	10 1
Well ID:	Date Sampled:																
	Aug-10	<0.02	3.2	<0.002	160	>0.006	>0.006	1.5	<0.005	54	2.1	4.6	<0.05	<0.005	520	<0.001	<0.05
0 7/0	Aug-09	<0.02	0.25	<0.002	140	>0.006	>0.006	2.3	0.007	39	2.2	2.9	<0.05	<0.005	450	<0.001	<0.05
6- M	Aug-08	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
	Aug-07	<0.020	2.5	<0.002	180	>0.006	>0.006	16.0	0.026	52	4.4	3.0	<0.25	<0.005	400	<0.10	0.084
	Aug-10	<0.02	0.048	<0.002	110	<0.006	<0.006	3.0	<0.005	86	0.56	7	<0.05	<0.005	1000	<0.001	<0.05
	Aug-09	NR¹	NR.	NR,	NR1	NR,	NR1	NR1	NR1	NR1	NR,	NR,	NR1	NR.	NR1	NR1	NR,
RW-18	Aug-08	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR,	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Ang-07	NR¹	NR¹	NR¹	NR¹	NR.	NR.	NR¹	NR1	NR¹	NR.	NR¹	NR¹	NR¹	NR¹	NR¹	NR.
	Aug-05	<0.02	0.038	<0.002	220	900.0>	>0.006	2	<0.005	64	4.1	4.4	<0.05	<0.005	200	<0.1	0.021
	Aug-10	<0.02	2.4	<0.002	140	>0.006	>0.006	11	900.0	58	6.1	8.2	<0.05	<0.005	220	<0.001	<0.05
D/M. 23	Ang-09	<0.02	1.3	<0.002	120	>0.006	>0.006	1.1	9800.0	52	4.6	6.8	<0.05	<0.005	200	<0.001	0.058
CZ- MA	Aug-08	<0.02	1.4	<0.002	110	>0.006	>0.006	2.9	0.013	47	4.6	6.3	<0.25	<0.005	170	<0.001	<0.05
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
	Aug-10	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
8C /VIQ	Ang-09	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
07-111	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹
MW-39	Aug-04	<0.02	0.15	<0.002	290	>0.006	>0.006	0.18	<0.005	28	0.3	8.7	<0.05	<0.005	750	<0.10	<0.005
	Aug-10	<0.02	1.7	<0.002	100	<0.006	<0.006	4.6	<0.005	47	2.2	3.8	<0.05	<0.005	500	<0.001	<0.05
MW 40	Ang-09	<0.02	1.7	<0.002	98	>0.006	>0.006		<0.005	41	2.3	3.8	<0.05	<0.005	540	<0.001	0.057
2	Aug-08	<0.02	1.8	<0.002	91	>0.006	>0.006	2.5	<0.005	42	2.5	3.5	<0.25	<0.005	520	<0.001	0.063
	Aug-07	NR⁴	NR	NR¹	NR⁴	NR⁴	NR1	NR1	NR1	NR¹	NR ¹	NR¹	NR⁴	NR ¹	NR1	NR¹	NR¹
	Aug-10	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR,
DW 42	Ang-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
74-147	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
		NR1	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR,	NR¹	NR¹	NR¹	NR¹	NR¹	NR1	NR¹	NR,
MW-55		<0.02	2.5	<0.002	180	<0.006	>0.006	12	<0.005	4	6.8	11.0	<0.05	0.005	400	<0.001	<0.05
MW-58	Aug-10	<0.02	1.6	<0.002	150	<0.006	>0.006	8.9	0.0085	49	4.3	4.9	<0.05	<0.005	390	<0.001	<0.05

Table 1 - Historical Groundwater Analytical Data Total Metals Analytical Result Summary Bloomfield Refinery - Bloomfield, New Mexico

					Parame	eters			
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Selenium (mg/L)	Silver (mg/L)	Mercury (mg/L)
Scree	ning Level (mg/L):	0.01 ²	1 ¹	0.005 ²	0.05 ¹	0.015 ²	0.05 ¹	0.05 ¹	0.002 ¹
Well ID:	Date Sampled:								
	Aug-10	<0.02	3.3	<0.002	0.007	0.012	<0.05	<0.005	<0.0008
RW-9	Aug-09	<0.02	0.23	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002
RVV-9	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	<0.020	1.7	<0.002	<0.006	0.052	<0.05	<0.005	<0.0002
	Aug-10	<0.02	1.3	0.0025	0.075	<0.025	<0.25	<0.005	0.0025
	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW-18	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-05	<0.02	0.038	<.002	0.32	0.16	NA	NA	NA
	Aug-10	<0.02	2.5	<0.002	<0.006	0.067	<0.05	<0.005	<0.0002
RW-23	Aug-09	<0.02	1.7	<0.002	<0.006	0.0096	<0.25	<0.005	<0.0002
1111-23	Aug-08	<0.02	1.4	<0.002	<0.006	0.013	<0.25	<0.005	<0.0002
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-10	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW-28	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
1111-20	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW-39	Aug-04	<0.02	0.71	<0.002	0.59	0.019	<0.05	<0.005	0.00021
	Aug-10	<0.02	2.3	<0.002	0.012	0.006	<0.05	<0.005	<0.0002
MW-40	Aug-09	<0.02	2.8	<0.002	<0.006	0.0075	<0.25	<0.005	<0.0002
10100-40	Aug-08	<0.02	1.8	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-10	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW-42	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
1000 42	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW-55	Aug-10	0.06	5.9	<0.002	0.054	0.3	<0.05	<0.005	<0.001
MW-58	Aug-10	<0.02	1.6	<0.002	<0.006	0.034	<0.05	<0.005	<0.001
OW	8/17/05	0.038	0.82	<0.002	<0.006	0.0056	<0.05	<0.005	<0.0002
11+15	5/11/05	0.037	1.9	<0.002	0.02	0.028	<0.05	<0.005	<0.0002
OW									
14+10	5/11/05	0.11	11	<0.002	0.09	0.73	<0.05	<0.005	<0.0002
CW	8/17/05	<0.02	0.12	<0.002	<0.006	0.0055	<0.05	<0.005	<0.0002
14+10	5/11/05	<0.1	0.33	<0.01	<0.03	<0.025	<0.25	<0.025	<0.0002
CW	8/22/05	<0.02	1.1	<0.002	<0.006	0.008	<0.5	<0.005	<0.0002
16+60	5/11/05	<0.02	0.6	<0.002	<0.006	0.01	<0.05	<0.005	<0.0002
OW									
19+50	5/10/05	<0.02	0.23	<0.002	<0.006	0.024	<0.05	<0.005	<0.0002
CW	08/17/05	<0.02	0.68	<0.002	<0.006	<0.0005	<0.05	<0.005	<0.0002
19+50	5/10/05	<0.02	0.2	<0.002	<0.006	0.0061	<0.05	<0.005	<0.0002

Notes:

0.038 -bolded and highlighted values exceed screening levels

mg/L = milligram per liter

MW = monitoring well

RW = recovey well

NA= not analyzed

NR¹= No Sample Required - Well Contains Separate Phase Hydrocarbon

1 - New Mexico Water Quality Control Standard for Ground Water

2 - Safe Drinking Water Act Maximum Contaminant Level

Table 1 - Historical Groundwater Analytical Data General Chemistry Analytical Result Summary Bloomfield Refinery - Bloomfield, New Mexico

						Parameter	S			
		Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Bromide (mg/L)	Nitrogen (mg/L)	Phosphorus (mg/L)	Sulfate (mg/L)	CO ₂ (mg/L)	Alk (mg/L)
Screenir Well ID:	ng Levels (mg/l): Date Sampled:	1.6 ¹	250 ¹	1 ²	NE	10 ²	NE	600 ¹	NE	NE
Well ID.	Aug-10	<1.0	230	<1.0	4.9	<1.0	<5.0	6.3	1300	1300
	Aug-10 Aug-09	<1.0	160	<1.0	4.5	<1.0	<5.0	280	920	1000
RW-9	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	<2.0	420	<2.0	3.9	<2.0	<10	41	1200	1000
	Aug-10	<2.0	380	<2.0	4.3	<2.0	<10	1700	950	950
	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW-18	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-05	<1.0	110	<5.0	<1.0	<1.0	<5.0	940	650	650
	Aug-10	<1.0	87	<1.0	1.1	<1.0	<5.0	<5.0	900	900
RW-23	Aug-09	<1.0	100	<1.0	5.1	<1.0	<5.0	11	860	890
1111 20	Aug-08	0.4	76	<0.10	<1.0	<0.10	<0.50	3.2	850	780
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-10	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW-28	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
NAVA / 20	Aug-07	NR¹	NR¹	NR¹	NR¹	NR1	NR1	NR¹	NR¹	NR¹
MW-39	Aug-04	0.65 0.24	140 320	<0.10 * 15	1.7 4.1	<0.10 * 15	<0.50 <0.0025	3100 < 0.50	35 1100	38 1100
	Aug-10 Aug-09	0.24	310	<2.0	4.1	<0.10	<0.0025	<0.50	1100	1100
MW-40	Aug-09 Aug-08	0.28	310	<2.0	4.0	<2.0	<0.50	<0.50	1200	1200
	Aug-08 Aug-07	NR ¹	NR¹	NR¹	NR ¹	NR¹	NR¹	NR ¹	NR¹	NR¹
	Aug-10	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW-42	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
1414/55	Aug-10	0.35	470	*6.1	4.4	*6.1	<0.50	1.3	1000	1000
MW-55	May-09	0.56	77	<1.0	NA	0.32	<0.50	4.0	NA	570
MW-58	Aug-10	0.31	270	*5.5	5	*5.5	<0.50	1.8	1100	1100
10100-36	May-09	0.38	2330	<1.0	NA	0.14	<0.50	110	NA	800
OW 11+15	8/17/05	0.42	340	NA	NA	<0.1	<0.5	25	NA	NA
000 11113	5/11/05	0.43	320	NA	NA	<0.5	<0.5	130	NA	NA
OW 14+10	5/11/05	0.53	73	NA	NA	<0.5	<0.5	350	NA	NA
CW 14+10	8/17/05	1.6	55	NA	NA	<0.1	<0.5	1400	NA	NA
	5/11/05	2.1	78	NA	NA	<0.5	<0.5	2300	NA	NA
CW 16+60	8/22/05	0.55	150	NA	NA	<0.1	<0.5	2.2	NA	NA
	5/11/05	0.42	150	NA	NA	<0.5	<0.5	150	NA	NA
CW 19+50	8/17/05	0.41	270	NA	NA	<0.5	<0.5	140	NA	NA
	5/10/05	0.35	230	NA	NA	<0.5	<0.5	260	NA	NA
OW 19+50	8/22/05 5/10/05	0.29 0.35	290 290	NA NA	NA NA	<0.1 <0.5	<0.5 <0.5	660 290	NA NA	NA
	3/10/03	0.55	230	NΑ	ΝA	٥.٥	٧٠.٥	230	INA	NA

Notes:

- bolded and highlighted value exceeds screening level

Alk = alkalinity, total CO₂ = Carbon Dioxide mg/L = milligram per liter

NE = not establishedNA = not analyzedMW = monitoring wellCW = collection wellRW = recovery wellOW = observation well

1 - New Mexico Water Quality Control Standard for Ground Water

2 - Safe Drinking Water Act Maximum Contaminant Level

NR¹= No Sample Required - Well Contains Separate Phase Hydrocarbon

^{* -} Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

Table 1 - Historical Groundwater Data Field Measurement Summary Western Refinery Company - Bloomfield, New Mexico

		Fie	ld Measuren	nents
Well ID:	Date Sampled:	E.C. (umhos/cm)	pH (s.u.)	Temperature (deg F)
	8/15/2006	5625.0	7.04	65.0
MW #39	4/6/2006	5697.7	6.96	61.8
10100 #39	4/11/2005	5666	6.93	59
	8/26/2004	5424	7.51	65
RW #18	8/1/2005	3469	6.99	65
RVV #10	4/7/2005	2591	6.98	64
RW #22	4/7/2005	2725	6.76	60
	8/21/2006	2391	7.02	69.5
OW 11+15	4/6/2006	1840	6.92	55.1
OW 11+15	8/5/2005	2467	6.90	66.0
	5/5/2005	2507	6.90	57.0
CW 11+15	4/6/2006	2388	7.01	53.1
CW 11+15	8/5/2005	SPH	SPH	SPH
	8/21/2006	NS	NS	NS
OW 14+10	4/6/2006	NS	NS	NS
OW 14110	8/5/2005	SPH	SPH	SPH
	5/5/2005	2311	6.95	60.0
	4/6/2006	1914	6.98	54.0
CW 14+10	8/5/2005	3502	6.93	69.0
	5/5/2005	4103	6.85	58.0
	8/21/2006	SPH	SPH	SPH
OW 16+60	4/6/2006	SPH	SPH	SPH
OW 10100	8/5/2005	SPH	SPH	SPH
	5/5/2005	SPH	SPH	SPH
	4/6/2006	2273	6.98	56.5
CW 16+60	8/5/2005	2108	6.98	73.0
	5/5/2005	2420	6.91	60.0
	8/21/2006	SPH	SPH	SPH
OW 19+50	4/6/2006	4043	6.9	54.9
CVV 13.30	8/5/2005	3251	6.99	74.0
	5/5/2005	2896	6.82	58.0
	4/6/2006	2670	6.98	52.8
CW 19+50	8/5/2005	3001	6.88	67.0
	5/5/2005	2844	6.83	56.0

Notes: OW = observation well deg F = degrees Fahrenheit

MW = monitor well

RW = recovery well

E.C. = electrical conductivity

NS = not sampled, well is dry

s.u. = standard units (recorded by portable pH meter)

umhos/cm = micro-mhos per centimeter

SPH = separate phase hydrocarbon contained in well, not sampled

TABLE 2
Residential Soil Screening Levels
Bloomfield Refinery - Bloomfield, New Mexico

					Cross Me	Cross Media Soil-to-Ground Water	round Water	Cross Me	Cross Media Soil-to-Ground Water	ound Water
	NME	ED	EPA	_	NMED	Ш	EPA	NMED	Ξ	РА
Analyte	Residential Soil (mg/kg)	Endpoint	Residential Soil (mg/kg)	ResSoil key	DAF1 (mg/kg)	GW_Risk- based SSL (mgkg)	GW_MCL- based SSL (mg/kg)	DAF (11.25) (mg/kg)	GW_Risk- based SSL (11.25) (mgkg)	GW_MCL- based SSL (11.25) (mg/kg)
Applicable depth interval	0-10,),	0-2'			All depths			All depths	
1,1,1,2-Tetrachloroethane	2.81E+01	ပ	2.00E+00	ပ	1.80E-03	2.10E-04	1	2.02E-02	2.36E-03	1
1,1,1-Trichloroethane	1.44E+04	ns	9.00E+03	ns	2.55E+00	3.30E+00	7.20E-02	2.87E+01	3.71E+01	8.10E-01
1,1,2,2-Tetrachloroethane	7.98E+00	ပ	5.90E-01	၁	2.40E-04	2.80E-05		2.70E-03	3.15E-04	1
1,1,2-Trichloroethane	2.61E+00	L	1.10E+00	ပ	1.11E-04	8.20E-05	1.70E-03	1.25E-03	9.23E-04	1.91E-02
1,1-Dichloroethane	7.86E+01	ပ	3.40E+00	ပ	6.79E-03	7.00E-04	1	7.64E-02	7.88E-03	
1,1-Dichloroethene	4.40E+02	ᆫ	2.50E+02	L	9.74E-02	1.20E-01	2.60E-03	1.10E+00	1.35E+00	2.93E-02
1,1-Dichloropropene	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	-		,		1	1	1	-	-	
1,2,3-Trichloropropane	5.10E-02	ပ	9.10E-02	၁	2.60E-06	4.40E-06	1	2.93E-05	4.95E-05	1
1,2,4-Trichlorobenzene	8.29E+01	L	8.70E+01	L	8.82E-03	1.30E-02	1.10E-01	9.92E-02	1.46E-01	1.24E+00
1,2,4-Trimethylbenzene	1		6.70E+01	u	1	2.40E-02		-	2.70E-01	1
1,2-Dibromo-3-chloropropane	8.58E-02	၁	5.60E-03	၁	1.17E-06	1.50E-07	9.20E-05	1.31E-05	1.69E-06	1.04E-03
1,2-Dibromoethane (EDB)	6.72E-01	O	3.40E-02	О	1.76E-05	1.90E-06	1.50E-05	1.98E-04	2.14E-05	1.69E-04
1,2-Dichlorobenzene	2.15E+03	SU	2.00E+03	SU	2.29E-01	4.00E-01	6.60E-01	2.57E+00	4.50E+00	7.43E+00
1,2-Dichloroethane (EDC)	8.32E+00	O	4.50E-01	၁	4.07E-04	4.40E-05	1.50E-03	4.58E-03	4.95E-04	1.69E-02
1,2-Dichloropropane	1.78E+01	၁	9.30E-01	c _*	1.21E-03	1.30E-04	1.70E-03	1.37E-02	1.46E-03	1.91E-02
1,3,5-Trimethylbenzene	-	-	4.70E+01	u	1	2.00E-02	-	1	2.25E-01	-
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropane	-	-	1.60E+03	u	-	2.70E-01	-	-	3.04E+00	-
1,4-Dichlorobenzene	3.28E+01	ပ	2.60E+00	O	3.60E-03	4.60E-04	8.10E-02	4.05E-02	5.18E-03	9.11E-01
1-Methylnaphthalene	-	-	2.20E+01	၁	-	1.50E-02	-	1	1.69E-01	-
2,2-Dichloropropane	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	6.16E+03	u	6.10E+03	u	3.31E+00	9.40E+00	-	3.72E+01	1.06E+02	1
2,4,6-Trichlorophenol	6.16E+01	u	4.40E+01	c**	3.37E-02	1.60E-02	-	3.79E-01	1.80E-01	-
2,4-Dichlorophenol	1.85E+02	u	1.80E+02	u	4.13E-02	1.80E-01	-	4.64E-01	2.03E+00	-
2,4-Dimethylphenol	1.23E+03	u	1.20E+03	u	3.22E-01	1.20E+00	-	3.63E+00	1.35E+01	1
2,4-Dinitrophenol	1.23E+02	u	1.20E+02	u	3.35E-02	6.80E-02	-	3.77E-01	7.65E-01	-
2,4-Dinitrotoluene	1.71E+01	S	1.60E+00	*2	2.46E-03	2.00E-04	-	2.76E-02	2.25E-03	1
2,6-Dinitrotoluene	3.56E+00	u	6.10E+01	u	5.10E-04	3.40E-02	-	5.74E-03	3.83E-01	1
2-Butanone (MEK)	3.74E+04	u	2.80E+04	SU	1.00E+00	1.50E+00	-	1.13E+01	1.69E+01	-
2-Chloronaphthalene	6.26E+03	us	6.30E+03	ns	2.85E+00	1.80E+01	1	3.21E+01	2.03E+02	-
2-Chlorophenol	3.91E+02	u	3.90E+02	u	5.76E-02	2.00E-01	1	6.48E-01	2.25E+00	1
2-Chlorotoluene	1.56E+03	ns	1.60E+03	ns	1.78E-01	8.00E-01		2.00E+00	9.00E+00	•

TABLE 2
Residential Soil Screening Levels
Bloomfield Refinery - Bloomfield, New Mexico

					Cross Me	Cross Media Soil-to-Ground Water	round Water	Cross Me	Cross Media Soil-to-Ground Water	round Water
	NME	ED	EPA		NMED	Ш	EPA	NMED	Ш	PA
Analyte	Residential Soil (mg/kg)	Endpoint	Residential Soil (mg/kg)	ResSoil key	DAF1 (mg/kg)	GW_Risk- based SSL (mgkg)	GW_MCL- based SSL (mg/kg)	DAF (11.25) (mg/kg)	GW_Risk- based SSL (11.25) (mgkg)	GW_MCL- based SSL (11.25) (mg/kg)
Applicable depth interval	0-10,	ر,	0-2'			All depths			All depths	
2-Hexanone	ı	,	1	,	ı	ı	ı	ı	ı	
2-Methylnaphthalene	ı	1	3.10E+02	ᄓ	1	9.00E-01	ı	ı	1.01E+01	
2-Methylphenol	ı	1	3.10E+03	L	1	2.00E+00	ı	ı	2.25E+01	
2-Nitroaniline	ı	,	1.80E+02	L	1	3.30E-02	ı	ı	3.71E-01	
2-Nitrophenol	-	-	-	-	-	1	-	1	1	-
3,3'-Dichlorobenzidine	1.18E+01	ပ	1.10E+00	ပ	6.14E-03	2.30E-03	1	6.90E-02	2.59E-02	1
3+4-Methylphenol	ı		3.10E+02	ᄓ	1	1.90E-01	1	1	2.14E+00	1
3-Nitroaniline	ı		1	,	ı	ı	1	1	1	1
4,6-Dinitro-2-methylphenol	4.93E+00	u	1		1.97E-03	1	-	2.22E-02	1	1
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	1	,	1	,	1	1	ı	1	ı	ı
4-Chloroaniline	ı	1	2.40E+00	ပ	1	1.20E-04	ı	ı	1.35E-03	
4-Chlorophenyl phenyl ether	ı	,	1	1	ı	ı	ı	ı	ı	ı
4-Chlorotoluene	1	-	5.50E+03	SU	1	2.80E+00	1	1	3.15E+01	1
4-IsopropyItoluene	-	-	-	1	-	-	-	-	-	-
4-Methyl-2-pentanone (methyl isobutyl										
ketone)	5.81E+03	SU	1	1	2.40E-01	-	1	2.70E+00	1	ı
4-Nitroaniline	ı		2.40E+01	*ు	1	1.00E-03		1	1.13E-02	
4-Nitrophenol	1	-	-	1	1	1	-	1	1	1
Acenaphthene	3.48E+03	L	3.40E+03	L	4.12E+00	2.70E+01	1	4.64E+01	3.04E+02	•
Acenaphthylene	-	1	1	1	1	1	1	-	1	1
Acetone	6.63E+04	u	6.10E+04	u	2.49E+00	4.40E+00	-	2.80E+01	4.95E+01	1
Aniline	1	-	8.50E+01	c**	1	3.40E-03	-	1	3.83E-02	1
Anthracene	1.74E+04	u	1.70E+04	u	4.25E+01	4.50E+02	-	4.79E+02	5.06E+03	1
Antimony	3.13E+01	u	3.10E+01	u	3.28E-01	6.60E-01	2.70E-01	3.69E+00	7.43E+00	3.04E+00
Arsenic	4.25E+00	0	3.90E-01	°,	1.50E-02	1.30E-03	2.90E-01	1.68E-01	1.46E-02	3.26E+00
Azobenzene	-	-	4.90E+00	၁	1	5.10E-04	-	-	5.74E-03	-
Barium	1.56E+04	u	1.50E+04	u	1.35E+02	3.00E+02	8.20E+01	1.52E+03	3.38E+03	9.23E+02
Benz(a)anthracene	1.53E+00	0	1.50E-01	၁	9.11E-02	1.40E-02	-	1.03E+00	1.58E-01	-
Benzene	1.78E+01	0	1.10E+00	c*	1.90E-03	2.30E-04	2.80E-03	2.14E-02	2.59E-03	3.15E-02
Benzo(a)pyrene	1.53E-01	ပ	1.50E-02	ပ	3.02E-02	4.60E-03	3.10E-01	3.40E-01	5.18E-02	3.49E+00
Benzo(b)fluoranthene	1.53E+00	၁	1.50E-01	ပ	3.09E-01	4.70E-02	1	3.47E+00	5.29E-01	1
Benzo(g,h,i)perylene	1	1	1	,		-	1	-	1	-

TABLE 2
Residential Soil Screening Levels
Bloomfield Refinery - Bloomfield, New Mexico

					Cross Me	dia Soil-to-G	Cross Media Soil-to-Ground Water	Cross Me	Cross Media Soil-to-Ground Water	ound Water
	NME	ED	EPA		NMED	Ш	EPA	NMED		EPA
Analyte	Residential Soil (mg/kg)	Endpoint	Residential Soil (mg/kg)	ResSoil key	DAF1 (mg/kg)	GW_Risk- based SSL (mgkg)	GW_MCL- based SSL (mg/kg)	DAF (11.25) (mg/kg)	GW_Risk- based SSL (11.25) (mgkg)	GW_MCL- based SSL (11.25) (mg/kg)
Applicable depth interval	0-10,	,0	0-2,			All depths			All depths	
Benzo(k)fluoranthene	1.53E+01	ပ	1.50E+00	ပ	3.02E+00	4.60E-01	1	3.40E+01	5.18E+00	ı
Benzoic acid	-		2.40E+05			3.30E+01	ı	-	3.71E+02	ı
Benzyl alcohol	1		3.10E+04	1	-	4.20E+00	-	1	4.73E+01	1
Beryllium	1.56E+02	u	1.60E+02	u	9.79E+00	5.80E+01	3.20E+00	1.10E+02	6.53E+02	3.60E+01
Bis(2-chloroethoxy)methane	1		1.80E+02	u	1	2.30E-02	-	1	2.59E-01	ı
Bis(2-chloroethyl)ether	3.11E+00	ပ	1.90E-01	ပ	3.03E-05	2.70E-06	1	3.40E-04	3.04E-05	ı
Bis(2-chloroisopropyl)ether	9.93E+01	ပ	-	-	2.37E-03	_	1	2.66E-02	-	ı
Bis(2-ethylhexyl)phthalate	3.80E+02	SO	3.50E+01	°,	9.99E+00	1.60E+00	2.00E+00	1.12E+02	1.80E+01	2.25E+01
Bromobenzene	-	-	9.40E+01	u	-	1.50E-02	-	-	1.69E-01	-
Bromodichloromethane	6.19E+00	၁	2.80E-01	၁	3.10E-04	3.30E-05	-	3.49E-03	3.71E-04	-
Bromoform	6.74E+02	၁	6.10E+01	c*	2.05E-02	2.30E-03	-	2.31E-01	2.59E-02	-
Bromomethane	1.77E+01	u	7.90E+00	u	1.71E-03	2.20E-03	-	1.93E-02	2.48E-02	-
Butyl benzyl phthalate	1		2.60E+02	*v	1	6.70E-01	-	1	7.54E+00	1
Cadmium	7.05E+01	u	7.00E+01	u	4.69E-01	1.40E+00	3.80E-01	5.28E+00	1.58E+01	4.28E+00
Carbazole	1		,	1	-	-	-	1	-	1
Carbon disulfide	1.55E+03	su	6.70E+02	SU	2.21E-01	2.70E-01	-	2.48E+00	3.04E+00	-
Carbon tetrachloride	1.07E+01	၁	2.50E-01	၁	1.66E-03	7.90E-05	2.00E-03	1.87E-02	8.89E-04	2.25E-02
Chlorobenzene	3.78E+02	su	3.10E+02	П	4.18E-02	6.80E-02	7.50E-02	4.70E-01	7.65E-01	8.44E-01
Chloroethane (ethyl chloride)	1.90E+04	su	1	-	5.37E+00	_	-	6.04E+01	-	-
Chloroform	5.90E+00	ပ	3.00E-01	ပ	5.46E-04	5.50E-05	-	6.14E-03	6.19E-04	1
Chloromethane	4.11E+01	u	1.20E+02	п	4.76E-03	4.90E-02	1	5.35E-02	5.51E-01	1
Chromium III	1.17E+05	ㅁ	1.20E+05	nm	1.01E+04	9.90E+07	1	1.13E+05	1.11E+09	1
Chromium VI	3.05E+00	၁	2.30E+02	u	4.84E-03	2.10E+00	-	5.45E-02	2.36E+01	1
Chromium total	9.66E+01	၁	1	1	1.01E+04	-	-	1.13E+05	-	1
Chrysene	1.53E+02	၁	1.50E+01	၁	9.30E+00	1.40E+00	-	1.05E+02	1.58E+01	1
cis-1,2-DCE	1.56E+02	u	7.80E+02	u	9.18E-03	1.10E-01	2.10E-02	1.03E-01	1.24E+00	2.36E-01
cis-1,3-Dichloropropene	2.93E+01	၁	1.70E+00	c*	1.40E-03	1.60E-04	-	1.57E-02	1.80E-03	-
Cobalt	-	-	2.30E+01	П	-	4.90E-01	-	-	5.51E+00	-
Cyanide	1.12E+01	u	1.60E+03	u	2.61E-04	7.40E+00	2.00E+00	2.94E-03	8.33E+01	2.25E+01
Dibenz(a,h)anthracene	1.53E-01	၁	1.50E-02	ပ	3.05E-01	1.50E-02	-	3.44E+00	1.69E-01	1
Dibenzofuran	-	٠	•	1	1	-	-	1	-	1
Dibromochloromethane	1.39E+01	၁	7.00E-01	ပ	3.77E-04	4.00E-05	-	4.24E-03	4.50E-04	1
Dibromomethane	1		7.80E+02	С	1	9.10E-02	1	1	1.02E+00	ı

TABLE 2
Residential Soil Screening Levels
Bloomfield Refinery - Bloomfield, New Mexico

					Cross Me	dia Soil-to-G	Cross Media Soil-to-Ground Water	Cross Me	Cross Media Soil-to-Ground Water	round Water
	NME	ED	EPA	_	NMED	Ш	EPA	NMED	Е	PA
Analyte	Residential Soil (mg/kg)	Endpoint	Residential Soil (mg/kg)	ResSoil key	DAF1 (mg/kg)	GW_Risk- based SSL (mgkg)	GW_MCL- based SSL (mg/kg)	DAF (11.25) (mg/kg)	GW_Risk- based SSL (11.25) (mgkg)	GW_MCL- based SSL (11.25) (mg/kg)
Applicable depth interval	0-10,	ر,	0-2'			All depths			All depths	
Dichlorodifluoromethane	1.82E+02	⊏	1.90E+02	С	3.61E-01	6.10E-01	1	4.07E+00	6.86E+00	ı
Diethyl phthalate	4.93E+04	L	4.90E+04	L	4.89E+00	1.30E+01		5.51E+01	1.46E+02	
Dimethyl phthalate	6.11E+05	L	ı	,	8.06E+01	-		9.06E+02	,	
Di-n-butyl phthalate	6.16E+03	ㅁ	ı	,	1.69E+00	-		1.90E+01	,	
Di-n-octyl phthalate	-		ı		1	-	ı	1	-	1
Ethylbenzene	7.51E+01	ပ	5.70E+00	ပ	1.31E-02	1.90E-03	8.90E-01	1.48E-01	2.14E-02	1.00E+01
Fluoranthene	2.32E+03	ㅁ	2.30E+03	L	6.69E+01	2.10E+02		7.52E+02	2.36E+03	
Fluorene	2.32E+03	L	2.30E+03	u	4.00E+00	3.30E+01	1	4.50E+01	3.71E+02	1
Hexachlorobenzene	3.33E+00	ပ	3.00E-01	ပ	4.61E-03	2.90E-04	7.00E-03	5.19E-02	3.26E-03	7.88E-02
Hexachlorobutadiene	6.16E+01	L	6.20E+00	* *o	4.39E-03	1.90E-03		4.94E-02	2.14E-02	
Hexachlorocyclopentadiene	3.70E+02	L	3.70E+02	u	6.68E-02	8.00E-01	1.80E-01	7.52E-01	9.00E+00	2.03E+00
Hexachloroethane	4.31E+01	u	3.50E+01	C**	3.31E-03	3.20E-03	-	3.72E-02	3.60E-02	-
Indeno(1,2,3-cd)pyrene	1.53E+00	ပ	1.50E-01	၁	1.00E+00	1.60E-01	1	1.13E+01	1.80E+00	1
Isophorone	5.61E+03	C	5.10E+02	c _*	2.11E-01	2.20E-02	-	2.38E+00	2.48E-01	-
Isopropylbenzene (cumene)	2.36E+03	SU	2.20E+03	SU	5.69E-01	1.30E+00	-	6.40E+00	1.46E+01	-
Lead	4.00E+02	IEUBK	4.00E+02	nL		-	-	0.00E+00	-	-
Mercury	2.38E+01	SU	4.30E+00	SU	3.27E-02	3.00E-02	1.00E-01	3.68E-01	3.38E-01	1.13E+00
Methyl tert-butyl ether (MTBE)	9.75E+02	C	3.90E+01	၁	2.77E-02	2.70E-03	-	3.11E-01	3.04E-02	-
Methylene chloride	4.09E+02	u	1.10E+01	၁	2.35E-02	1.20E-03	1.30E-03	2.65E-01	1.35E-02	1.46E-02
Naphthalene	4.97E+01	၁	3.90E+00	*	4.11E-03	5.50E-04	1	4.63E-02	6.19E-03	-
n-Butylbenzene	-		1	-	1	_	1	-	-	-
Nickel	1.56E+03	u	1.40E+04	ပ	2.42E+01	4.80E+01	1	2.73E+02	5.40E+02	
Nitrobenzene	6.04E+01	၁	4.40E+00	*	7.20E-04	7.10E-05	1	8.10E-03	7.99E-04	•
N-Nitrosodi-n-propylamine	1		6.90E-02	ပ	-	1.10E-05	1	-	1.24E-04	•
N-Nitrosodiphenylamine	7.94E-03	C	9.90E+01	၁	4.92E-07	1.70E-01	1	5.54E-06	1.91E+00	
n-Propylbenzene	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	9.85E+00	C	3.00E+00	၁	3.04E-03	3.90E-03	7.00E-03	3.42E-02	4.39E-02	7.88E-02
Phenanthrene	1.74E+03	SU	-	-	4.30E+00	_	-	4.83E+01	-	-
Phenol	1.83E+04	u	1.80E+04	u	2.62E+00	8.10E+00	-	2.94E+01	9.11E+01	1
Pyrene	1.74E+03	u	1.70E+03	n	9.59E+00	1.50E+02	1	1.08E+02	1.69E+03	
Pyridine	-		7.80E+01	u	-	9.70E-03	1	1	1.09E-01	•
sec-Butylbenzene	-	-	-	-	1	-	1	1	-	
Selenium	3.91E+02	u	3.90E+02	n	5.11E-01	9.50E-01	2.60E-01	5.75E+00	1.07E+01	2.93E+00

TABLE 2
Residential Soil Screening Levels
Bloomfield Refinery - Bloomfield, New Mexico

					Cross Me	Cross Media Soil-to-Ground Water	round Water	Cross Me	Cross Media Soil-to-Ground Water	ound Water
	NMED	Q:	EPA		NMED	Ε	EPA	NMED	I	EPA
Analyte	Residential Soil (mg/kg)	Endpoint	Residential Soil (mg/kg)	ResSoil key	DAF1 (mg/kg)	GW_Risk- based SSL (mgkg)	GW_MCL- based SSL (mg/kg)	DAF (11.25) (mg/kg)	GW_Risk- based SSL (11.25) (mgkg)	GW_MCL- based SSL (11.25) (mg/kg)
Applicable depth interval	0-10	ر,	0-2,			All depths			All depths	
Silver	3.91E+02	u	3.90E+02	n	6.88E-01	1.60E+00	-	7.74E+00	1.80E+01	-
Styrene	7.26E+03	SU	6.50E+03	ns	1.03E+00	2.00E+00	1.20E-01	1.16E+01	2.25E+01	1.35E+00
tert-Butylbenzene	-	-	-	-	-	-	-	-	1	-
Tetrachloroethene (PCE)	1.11E+02	Э	5.70E-01	С	1.60E-02	5.20E-05	2.40E-03	1.81E-01	5.85E-04	2.70E-02
Tetraethyl Lead	6.16E-03	u	-	-	4.70E-06	-	-	5.29E-05	-	-
Toluene	5.23E+03	su	5.00E+03	ns	6.07E-01	1.70E+00	7.60E-01	6.83E+00	1.91E+01	8.55E+00
trans-1,2-DCE	2.95E+02	u	1.10E+02	n	2.35E-02	3.40E-02	3.20E-02	2.64E-01	3.83E-01	3.60E-01
trans-1,3-Dichloropropene	2.93E+01	Э	1.70E+00	c _*	1.40E-03	1.60E-04	-	1.57E-02	1.80E-03	-
Trichloroethene (TCE)	6.77E+00	u	2.80E+00	С	8.75E-04	6.10E-04	1.90E-03	9.84E-03	6.86E-03	2.14E-02
Trichlorofluoromethane	1.23E+03	SU	8.00E+02	n	7.84E-01	8.40E-01	-	8.82E+00	9.45E+00	-
Vanadium	3.94E+02	u	5.50E+02	n	6.31E+01	2.60E+02	-	7.10E+02	2.93E+03	-
Vinyl chloride	7.42E-01	Э	6.00E-02	С	6.75E-05	5.60E-06	7.00E-04	7.59E-04	6.30E-05	7.88E-03
Xylenes, Total	8.71E+02	SU	6.00E+02	ns	1.49E-01	2.30E-01	1.10E+01	1.68E+00	2.59E+00	1.24E+02
Zinc	2.35E+04	u	2.30E+04	n	3.71E+02	6.80E+02	-	4.17E+03	7.65E+03	1

c - carcinogen

n - noncarcinogen

sv exceed saturation

nl - noncarcinogen, SSL may exceed ceiling limit nls - noncarcinogen, SSL may exceed both saturation and ceiling limit

cs - carcinogen, SSL may exceed saturation ns - noncarcinogen, SSL may exceed saturation

nay exceed saturation
no screenig value currently available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)

TABLE 3
Non- Residential Soil Screening Levels
Bloomfield Refinery - Bloomfield, New Mexico

						-	Cross Med	dia Soil-to-G	Cross Media Soil-to-Ground Water	Cross Med	Cross Media Soil-to-Ground Water	and Water
		NMED	ΞD		EPA		NMED	Ш	EPA	NMED	EPA	٨
Analyte	IndOccSoil (mg/kg)	IndOccSoil (Endpoint)	ConsWork (mg/kg)	ConsWork Soil (Endboint)	Industrial (mg/kg)	IndSoil _key	DAF1 (mg/kg)	GW_Risk- based SSL	GW_MCL- based SSL (mg/kg)	DAF (11.25) (mg/kg)	GW_Risk- based SSL (11.25)	GW_MCL- based SSL (11.25)
Applicable denth interval	Ċ	0-2'	Ċ	0-10'	.c-0			All denths			(mgkg) All denths	(mg/kg)
שאוסיים משפיולל	L		1 1		20 100 0		L 00	and and a		L	Sindap III.	
1,1,1,2-l etrachloroethane	1.37E+02	ပ	7.79E+02	SS	9.80E+00	ပ	1.80E-03	2.10E-04	- L	2.02E-02	2.36E-03	, L
1,1,1-Trichloroethane	7.25E+04	ns	1.36E+04	ns	3.90E+04	SU	2.55E+00	3.30E+00	7.20E-02	2.87E+01	3.71E+01	8.10E-01
1,1,2,2-Tetrachloroethane	3.94E+01	С	1.97E+02	ပ	2.90E+00	၁	2.40E-04	2.80E-05	-	2.70E-03	3.15E-04	-
1,1,2-Trichloroethane	1.24E+01	C	2.30E+00	ns	5.50E+00	ပ	1.11E-04	8.20E-05	1.70E-03	1.25E-03	9.23E-04	1.91E-02
1,1-Dichloroethane	3.83E+02	Э	1.82E+03	SO	1.70E+01	ပ	6.79E-03	7.00E-04	,	7.64E-02	7.88E-03	1
1,1-Dichloroethene	2.26E+03	SU	4.24E+02	Su	1.10E+03	L	9.74E-02	1.20E-01	2.60E-03	1.10E+00	1.35E+00	2.93E-02
1,1-Dichloropropene		1	1		1		1	1	,			
1.2.3-Trichlorobenzene		1	-	,	1	-	1	-		-		1
1.2.3-Trichloropropane	1.21E+00	O	6.31E+00	U	4.10E-01	U	2.60E-06	4.40E-06	,	2.93E-05	4.95E-05	1
1.2.4-Trichlorobenzene	4.23E+02	SU	7.91E+01	SU	4.00E+02	ns	8.82E-03	1.30E-02	1.10E-01	9.92E-02	1.46E-01	1.24E+00
1,2,4-Trimethylbenzene	1	1	1	1	2.80E+02	ns	1	2.40E-02	-	1	2.70E-01	
1,2-Dibromo-3-chloropropane	1.18E+00	O	5.53E+00	O	7.30E-02	ပ	1.17E-06	1.50E-07	9.20E-05	1.31E-05	1.69E-06	1.04E-03
1,2-Dibromoethane (EDB)	3.31E+00	O	1.63E+01	O	1.70E-01	ပ	1.76E-05	1.90E-06	1.50E-05	1.98E-04	2.14E-05	1.69E-04
1,2-Dichlorobenzene	1.30E+04	SU	2.50E+03	ns	1.00E+04	SU	2.29E-01	4.00E-01	6.60E-01	2.57E+00	4.50E+00	7.43E+00
1,2-Dichloroethane (EDC)	4.07E+01	O	5.38E+01	L	2.20E+00	ပ	4.07E-04	4.40E-05	1.50E-03	4.58E-03	4.95E-04	1.69E-02
1,2-Dichloropropane	8.68E+01	O	2.54E+01	٦	4.70E+00	ڻ*	1.21E-03	1.30E-04	1.70E-03	1.37E-02	1.46E-03	1.91E-02
1,3,5-Trimethylbenzene	,	-	-	-	2.00E+02	۵	-	2.00E-02	,	-	2.25E-01	
1,3-Dichlorobenzene	1	1	1	1	1		1	1	1	-	-	1
1,3-Dichloropropane	1	1	1	1	2.00E+04	SU	1	2.70E-01	,	1	3.04E+00	1
1,4-Dichlorobenzene	1.59E+02	ပ	7.46E+02	SO	1.30E+01	O	3.60E-03	4.60E-04	8.10E-02	4.05E-02	5.18E-03	9.11E-01
1-Methylnaphthalene		1	1	1	9.90E+01	ပ	1	1.50E-02		1	1.69E-01	1
2,2-Dichloropropane	,	1	1	1	1		1	1	1	1	1	1
2,4,5-Trichlorophenol	9.16E+04	С	2.69E+04	_	6.20E+04	c	3.31E+00	9.40E+00	,	3.72E+01	1.06E+02	1
2,4,6-Trichlorophenol	9.16E+02	ч	2.69E+02	۵	1.60E+02	c*	3.37E-02	1.60E-02	1	3.79E-01	1.80E-01	1
2,4-Dichlorophenol	2.75E+03	С	8.07E+02	c	1.80E+03	_	4.13E-02	1.80E-01	1	4.64E-01	2.03E+00	1
2,4-Dimethylphenol	1.83E+04	L	5.38E+03	۵	1.20E+04	٦	3.22E-01	1.20E+00		3.63E+00	1.35E+01	
2,4-Dinitrophenol	1.83E+03	u	5.38E+02	u	1.20E+03	u	3.35E-02	6.80E-02	-	3.77E-01	7.65E-01	-
2,4-Dinitrotoluene	8.23E+01	С	5.36E+02	u	5.50E+00	C	2.46E-03	2.00E-04	1	2.76E-02	2.25E-03	-
2,6-Dinitrotoluene	1.72E+01	п	8.09E+01	С	6.20E+02	L	5.10E-04	3.40E-02	1	5.74E-03	3.83E-01	1
2-Butanone (MEK)	4.11E+05	nls	9.17E+04	nls	1.90E+05	nms	1.00E+00	1.50E+00	1	1.13E+01	1.69E+01	1
2-Chloronaphthalene	1.04E+05	ns	2.83E+04	ns	8.20E+04	ns	2.85E+00	1.80E+01	-	3.21E+01	2.03E+02	
2-Chlorophenol	6.49E+03	n	1.77E+03	u	5.10E+03	u	5.76E-02	2.00E-01	1	6.48E-01	2.25E+00	1
2-Chlorotoluene	2.60E+04	ns	7.08E+03	SU	2.00E+04	ns	1.78E-01	8.00E-01	-	2.00E+00	9.00E+00	-
2-Hexanone	1	-	-	-	-	-	-	1	1	-		1
2-Methylnaphthalene			-		4.10E+03	SU		9.00E-01	,	-	1.01E+01	
2-Methylphenol		1	1	1	3.10E+04	L	1	2.00E+00	,	1	2.25E+01	
2-Nitroaniline		-	1	-	1.80E+03	L	-	3.30E-02	,	-	3.71E-01	1
2-Nitrophenol	-	-	-	-	-	-	-	_	-	-	-	-
3,3'-Dichlorobenzidine	5.70E+01	С	4.10E+02	၁	3.80E+00	C	6.14E-03	2.30E-03	ì	6.90E-02	2.59E-02	1
3+4-Methylphenol	1	ı	ī	1	3.10E+03	٦	1	1.90E-01	,	1	2.14E+00	1
3-Nitroaniline	1	-	1	-	1				1	1	1	1
4,6-Dinitro-2-methylphenol	7.33E+01	L	2.15E+01	c			1.97E-03	1	1	2.22E-02	1	1

TABLE 3
Non- Residential Soil Screening Levels
Bloomfield Refinery - Bloomfield, New Mexico

							Cross Me	dia Soil-to-G	Cross Media Soil-to-Ground Water	Cross Med	Cross Media Soil-to-Ground Water	and Water
		NMED	ED		EPA		NMED	Ш	EPA	NMED	EPA	١A
	lioSocoon	lioSooObul	ConsWork	ConsWork	Industrial	IndSoil	DAF1	GW_Risk-	GW_MCL-	DAF (11,25)	GW_Risk-	GW_MCL-
Analyte	(mg/kg)	(Endpoint)	(mg/kg)	Soil (Endpoint)	(mg/kg)	_key	(mg/kg)	based SSL (mg/kg)	based SSL (mg/kg)	(mg/kg)	(11.25) (mgkg)	(11.25) (mg/kg)
Applicable depth interval	-0	0-2'	0-10,	١٥,	0-2,			All depths			All depths	
4-Bromophenyl phenyl ether	1	1	ı	1		1	1	1	1	1	ı	-
4-Chloro-3-methylphenol	1	1	1	1	1		1	ı	,	,		
4-Chloroaniline		1		1	8.60E+00	ပ		1.20E-04			1.35E-03	
4-Chlorophenyl phenyl ether	1	ı	ı	1	1		1	ı	1	,		
4-Chlorotoluene	1	1	1		7.20E+04	SU	1	2.80E+00	1		3.15E+01	-
4-Isopropyltoluene	1	1	1	1	1		1	ı	1	1	1	-
4-Methyl-2-pentanone (methyl isobutyl ketone)	8.16E+04	SU	2.02E+04	SU	1	1	2.40E-01	,		2.70E+00		
4-Nitroaniline	1	1	1	1	8.60E+01	*ు	ı	1.00E-03	1	1	1.13E-02	-
4-Nitrophenol	1	1	1	1	1		1	1	1	,	-	1
Acenaphthene	5.05E+04	۵	1.51E+04	_	3.30E+04	۵	4.12E+00	2.70E+01	1	4.64E+01	3.04E+02	
Acenaphthylene	-	1	-	-	1		1	-		,		-
Acetone	9.60E+05	slu	2.42E+05	slu	6.10E+05	smu	2.49E+00	4.40E+00	1	2.80E+01	4.95E+01	-
Aniline	1	1	1	1	3.00E+02	*ు	ı	3.40E-03	1	1	3.83E-02	-
Anthracene	2.53E+05	Г	7.53E+04	c	1.70E+05	mu	4.25E+01	4.50E+02	1	4.79E+02	5.06E+03	-
Antimony	5.19E+02	u	1.42E+02	c	4.10E+02	٦	3.28E-01	6.60E-01	2.70E-01	3.69E+00	7.43E+00	3.04E+00
Arsenic	2.15E+01	O	5.74E+01	_	1.60E+00	ပ	1.50E-02	1.30E-03	2.90E-01	1.68E-01	1.46E-02	3.26E+00
Azobenzene	1	1	1		2.20E+01	O		5.10E-04	1	1	5.74E-03	-
Barium	2.55E+05	Г	4.35E+03	۵	1.90E+05	mu	1.35E+02	3.00E+02	8.20E+01	1.52E+03	3.38E+03	9.23E+02
Benz(a)anthracene	3.23E+01	၁	2.40E+02	၁	2.10E+00	ပ	9.11E-02	1.40E-02	1	1.03E+00	1.58E-01	-
Benzene	8.72E+01	O	1.42E+02	u	2.60E+00	ڻ*	1.90E-03	2.30E-04	2.80E-03	2.14E-02	2.59E-03	3.15E-02
Benzo(a)pyrene	3.23E+00	O	2.40E+01	O	2.10E-01	ပ	3.02E-02	4.60E-03	3.10E-01	3.40E-01	5.18E-02	3.49E+00
Benzo(b)fluoranthene	3.23E+01	O	2.40E+02	С	2.10E+00	ပ	3.09E-01	4.70E-02	1	3.47E+00	5.29E-01	
Benzo(g,h,i)perylene	-	-	1	-	-	-	-	1	-	-	-	-
Benzo(k)fluoranthene	3.23E+02	О	2.31E+03	С	2.10E+01	O	3.02E+00	4.60E-01	-	3.40E+01	5.18E+00	-
Benzoic acid	1	1	1	-	2.50E+06	nu	1	3.30E+01	1	-	3.71E+02	-
Benzyl alcohol	-	1	1	-	3.10E+05	nm		4.20E+00	1	1	4.73E+01	-
Beryllium	2.58E+03	L	1.48E+02	L	2.00E+03	L	9.79E+00	5.80E+01	3.20E+00	1.10E+02	6.53E+02	3.60E+01
Bis(2-chloroethoxy)methane	-	1	1	-	1.80E+03	u		2.30E-02	1	1	2.59E-01	-
Bis(2-chloroethyl)ether	1.57E+01	C	1.95E+00	C	9.00E-01	ပ	3.03E-05	2.70E-06	1	3.40E-04	3.04E-05	-
Bis(2-chloroisopropyl)ether	5.19E+02	cs	3.54E+03	cs	-		2.37E-03	1	-	2.66E-02	-	-
Bis(2-ethylhexyl)phthalate	1.83E+03	cs	5.38E+03	u	1.20E+02	ပ	9.99E+00	1.60E+00	2.00E+00	1.12E+02	1.80E+01	2.25E+01
Bromobenzene	-	-	-	-	4.10E+02	u	1	1.50E-02	-	1	1.69E-01	-
Bromodichloromethane	3.02E+01	С	1.43E+02	С	1.40E+00	ပ	3.10E-04	3.30E-05	1	3.49E-03	3.71E-04	-
Bromoform	3.25E+03	С	5.38E+03	n	2.20E+02	*0	2.05E-02	2.30E-03	1	2.31E-01	2.59E-02	-
Bromomethane	9.45E+01	n	1.79E+01	n	3.50E+01	u	1.71E-03	2.20E-03	1	1.93E-02	2.48E-02	-
Butyl benzyl phthalate	-	-	1	-	9.10E+02	C	1	6.70E-01	-	-	7.54E+00	-
Cadmium	1.11E+03	n	7.21E+01	n	8.00E+02	u	4.69E-01	1.40E+00	3.80E-01	5.28E+00	1.58E+01	4.28E+00
Carbazole	1	ı	ı	,	,	1	1	1	1	1	1	-
Carbon disulfide	8.54E+03	ns	1.62E+03	ns	3.00E+03	ns	2.21E-01	2.70E-01	ı	2.48E+00	3.04E+00	-
Carbon tetrachloride	5.25E+01	O	2.02E+02	ns	1.30E+00	ပ	1.66E-03	7.90E-05	2.00E-03	1.87E-02	8.89E-04	2.25E-02
Chlorobenzene	2.16E+03	US	4.12E+02	US	1.50E+03	Su	4.18E-02	6.80E-02	7.50E-02	4.70E-01	7.65E-01	8.44E-01

TABLE 3
Non- Residential Soil Screening Levels
Bloomfield Refinery - Bloomfield, New Mexico

							Cross Me	dia Soil-to-G	Cross Media Soil-to-Ground Water	Cross Med	dia Soil-to-Grou	ind Water
		NMED	ΞD		EPA		NMED	Ш	EPA	NMED	NMED EPA	Ą
Analyte	IndOccSoil (mg/kg)	IndOccSoil (Endpoint)	ConsWork (mg/kg)	ConsWork Soil	Industrial (mg/kg)	IndSoil _key	DAF1 (mg/kg)	GW_Risk- based SSL	GW_MCL- based SSL	DAF (11.25) (mg/kg)	GW_Risk- based SSL (11.25)	GW_MCL- based SSL (11.25)
Applicable depth interval	Ċ	-0-0	Ċ	0-10'	10-2						(mgkg)	(mg/kg)
Opinion (opinion) occupation	0 05 0 10 4 0 4		1 66 - 104)		275+00			6 04E±04		
Chloroform	0.935+04	2 (1.00=+04	SIII	4 505.00		3.37E+00	20 202 3	-	6.445.02	- 401	
Chloromothono	2.07 E+01	ى د	2.346+02	ي د	1.30E+00	ט נ	3.40E-04	2.30E-03	-	0.14E-03	6.19E-04	
Choming III	4 05E+02	3 2	2.33E+02 5.31E+05	= 3	3.10E+02 1.50E+06	- 2	2 46E+07	9 90E+02		2.33E-02	1.11E+00	
Chromium VI	7.21E+01		6.69F+01	<u> </u>	1.30E+03		4 84F-03	2.30E107	•	5.45F-02	2.36F+01	
Chromium Total	5 05F+02	: c	1.34F+02				1.01F+04			1		
Chrysene	3.23E+03	O	2.31E+04	: 0	2.10E+02	С	9.30E+00	1.40E+00	1	1.05E+02	1.58E+01	
cis-1,2-DCE	2,60E+03	SU	7.08E+02	U	1,00E+04	ns	9.18E-03	1.10E-01	2.10E-02	1.03E-01	1.24E+00	2.36E-01
cis-1,3-Dichloropropene	1.46E+02	O	1.30E+02	SU	8.40E+00	*0	1.40E-03	1.60E-04	-	1.57E-02	1.80E-03	1
Cobalt			1	1	3.00E+02	u		4.90E-01	1	-	5.51E+00	1
Cyanide	6.33E+01	С	1.21E+01	п	2.00E+04	n	2.61E-04	7.40E+00	2.00E+00	2.94E-03	8.33E+01	2.25E+01
Dibenz(a,h)anthracene	3.23E+00	O	2.40E+01	၁	2.10E-01	С	3.05E-01	1.50E-02	-	3.44E+00	1.69E-01	-
Dibenzofuran	-		1	-	-	-	-	1	-		-	
Dibromochloromethane	6.74E+01	O	3.40E+02	SO	3.40E+00	C	3.77E-04	4.00E-05		4.24E-03	4.50E-04	1
Dibromomethane	-	1	1	-	1.00E+04	SU	1	9.10E-02	-		1.02E+00	1
Dichlorodifluoromethane	8.65E+02	SU	1.61E+02	su	7.80E+02	n	3.61E-01	6.10E-01	-	4.07E+00	6.86E+00	-
Diethyl phthalate	7.33E+05	lu	2.15E+05	ļμ	4.90E+05	nm	4.89E+00	1.30E+01	-	5.51E+01	1.46E+02	-
Dimethyl phthalate	6.84E+06	п	2.38E+06	Г	_	_	8.06E+01	1	1	9.06E+02	-	-
Di-n-butyl phthalate	9.16E+04	п	2.69E+04	u	_	_	1.69E+00	-	-	1.90E+01	-	-
Di-n-octyl phthalate		•		-	_	-	-	-		-	-	
Ethylbenzene	3.68E+02	CS	1.77E+03	cs	2.90E+01	С	1.31E-02	1.90E-03	8.90E-01	1.48E-01	2.14E-02	1.00E+01
Fluoranthene	3.37E+04	u	1.00E+04	u	2.20E+04	n	6.69E+01	2.10E+02	-	7.52E+02	2.36E+03	1
Fluorene	3.37E+04	SU	1.00E+04	su	2.20E+04	n	4.00E+00	3.30E+01	-	4.50E+01	3.71E+02	-
Hexachlorobenzene	1.60E+01	O	1.17E+02	၁	1.10E+00	С	4.61E-03	2.90E-04	7.00E-03	5.19E-02	3.26E-03	7.88E-02
Hexachlorobutadiene	3.29E+02	O	2.69E+02	п	2.20E+01	c _*	4.39E-03	1.90E-03	1	4.94E-02	2.14E-02	•
Hexachlorocyclopentadiene	5.49E+03	п	8.67E+02	п	3.70E+03	n	6.68E-02	8.00E-01	1.80E-01	7.52E-01	9.00E+00	2.03E+00
Hexachloroethane	6.41E+02	L	1.88E+02	۵	1.20E+02	c**	3.31E-03	3.20E-03	1	3.72E-02	3.60E-02	-
Indeno(1,2,3-cd)pyrene	3.23E+01	O	2.40E+02	ပ	2.10E+00	C	1.00E+00	1.60E-01	-	1.13E+01	1.80E+00	1
Isophorone	2.70E+04	SO	5.37E+04	С	1.80E+03	*0	2.11E-01	2.20E-02	1	2.38E+00	2.48E-01	
Isopropylbenzene (cumene)	1.42E+04	SU	2.74E+03	Su	1.10E+04	ns.	5.69E-01	1.30E+00	-	6.40E+00	1.46E+01	
Lead	8.00E+02	IEUBK	8.00E+02	IEUBK	8.00E+02	nL	0 275 0		1 00 1	0.00E+00	- 0000	1 10 1
Melculy	1 007 :00	2	2.07E+01	2	4.001.00	2	3.27 5.02	3.00E-02	1.00E-01	3.00 -0 -	3.30E-01	1.132+00
Methyl terr-butyl etner (MTBE)	4.82E+03	υ (2.42E+04	SS	1.90E+02	C	2.11E-02	2.70E-03	1 201 02	3.11E-01	3.04E-02	1 46 - 00
ואופווואופוופ כוווסוומפ	3.135+03	۰	1.215+03	2	3.40E+01	÷ ر	4.447.00	1.20 -0.3	1.30E-03	4.007.00	1.335-02	1.405-02
Naphthalene	Z.41E+0Z	O	1.59E+02	د	Z.00E+01	C	4.11E-U3	5.50E-04	ı	4.63E-02	6.19E-U3	
n-Butylbenzene	1			ı	-		-	ı		-		
Nickel	2.57E+04	С	6.19E+03	u	6.90E+04	С	2.42E+01	4.80E+01	-	2.73E+02	5.40E+02	-
Nitrobenzene	2.93E+02	O	3.53E+02	u	2.20E+01	c _*	7.20E-04	7.10E-05	-	8.10E-03	7.99E-04	-
N-Nitrosodi-n-propylamine	-	1	1	-	2.50E-01	С	-	1.10E-05	-	-	1.24E-04	1
N-Nitrosodiphenylamine	1.71E-01	ပ	1.25E+00	၁	3.50E+02	С	4.92E-07	1.70E-01	-	5.54E-06	1.91E+00	-
n-Propylbenzene	. !			1		-		,	,	-		,
Pentacniorophenol	4.45E+01	ပ	3.46E+02	ပ	9.00E+00	ပ	3.04E-03	3.90E-03	7.00E-03	3.4ZE-UZ	4.39E-UZ	7.88E-02

Non- Residential Soil Screening Levels Bloomfield Refinery - Bloomfield, New Mexico TABLE 3

							Cross Me	Cross Media Soil-to-Ground Water	ound Water	Cross Med	Cross Media Soil-to-Ground Water	ind Water
NMED	NMED	G.			EPA		NMED	Е	EPA	NMED	EPA	Ą
il IndOccSoil C	IndOccSoil	ConsWork		ConsWork	Industrial	lioSbul	DAF1	GW_Risk- based SSL	GW_MCL- based SSL	DAF (11.25)	GW_Risk- based SSL	GW_MCL- based SSL
(mg/kg) (Endpoint) (mg/kg)		(mg/kg)		(Endpoint)	(mg/kg)	_key	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(11.25) (mgkg)	(11.25) (mg/kg)
0-2' 0		0	1	0-10,	0-2			All depths			All depths	
2.53E+04 n 7.53E+03	n 7.53E+0	7.53E+0	က	u			4.30E+00	1		4.83E+01		1
2.75E+05 nl 7.74E+04		7.74E+(14	u	1.80E+05	шu	2.62E+00	8.10E+00	-	2.94E+01	9.11E+01	-
2.53E+04 n 7.53E+03		1.53E+	03	u	1.70E+04	u	9.59E+00	1.50E+02	-	1.08E+02	1.69E+03	-
	-	-		-	1.00E+03	u	-	9.70E-03	-	-	1.09E-01	-
-	-	-		-	-	-	-	-	-	-	-	-
6.49E+03 n 1.75E+03	1	1.75E+	03	u	5.10E+03	u	5.11E-01	9.50E-01	2.60E-01	5.75E+00	1.07E+01	2.93E+00
6.49E+03 n 1.77E+03	1	1.77E+(33	u	5.10E+03	u	6.88E-01	1.60E+00	-	7.74E+00	1.80E+01	-
5.13E+04 ns 1.02E+04		1.02E+(4	ns	3.80E+04	us	1.03E+00	2.00E+00	1.20E-01	1.16E+01	2.25E+01	1.35E+00
	-	1		1	-	-	-	-	-	-	-	-
6.29E+02 c 1.20E+02		1.20E+	02	cs	2.70E+00	ပ	1.60E-02	5.20E-05	2.40E-03	1.81E-01	5.85E-04	2.70E-02
9.16E-02 n 3.54E-02		3.54E-(2	n			4.70E-06					
6.13E+04 ns 1.40E+04	1	1.40E+	4	ns	4.60E+04	ns	6.07E-01	1.70E+00	7.60E-01	6.83E+00	1.91E+01	8.55E+00
1.61E+03 ns 3.05E+02		3.05E+()2	ns	5.00E+02	п	2.35E-02	3.40E-02	3.20E-02	2.64E-01	3.83E-01	3.60E-01
1.46E+02 c 1.30E+02	1	1.30E+	02	ns	8.40E+00	c _*	1.40E-03	1.60E-04	-	1.57E-02	1.80E-03	-
3.65E+01 c 6.90E+00		+306 ['] 9	00	cs	1.40E+01	О	8.75E-04	6.10E-04	1.90E-03	9.84E-03	6.86E-03	2.14E-02
6.03E+03 ns 1.13E+03		1.13E+0	3	ns	3.40E+03	su	7.84E-01	8.40E-01	-	8.82E+00	9.45E+00	-
6.53E+03 n 6.14E+02		6.14E+C	12	u	7.20E+03	u	6.31E+01	2.60E+02	-	7.10E+02	2.93E+03	-
2.84E+01 c 1.61E+02	1	1.61E+0)2	С	1.70E+00	О	6.75E-05	5.60E-06	7.00E-04	7.59E-04	6.30E-05	7.88E-03
4.28E+03 ns 7.98E+02		7.98E+(22	ns	2.60E+03	us	1.49E-01	2.30E-01	1.10E+01	1.68E+00	2.59E+00	1.24E+02
3.89E+05 nl 1.06E+05		1.06E+C	2	n	3.10E+05	пш	3.71E+02	3.71E+02 6.80E+02		4.17E+03	7.65E+03	

c - carcinogen

n - noncarcinogen

cs - carcinogen, SSL may exceed saturation

nl - noncardinogen, SSL may exceed ceiling limit nls - noncardinogen, SSL may exceed both saturation and ceiling limit

ns - noncarcinogen, SSL may exceed saturation

NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (April 2009)

TABLE 4 Groundwater Screening Levels Bloomfield Refinery - Bloomfield, New Mexico

		NMED			EPA	
Analyte	New Mexico WQCC Standards (ug/L)	NMED Tap Water (ug/L)	TapW_key	EPA Screening Levels.Tap Water (ug/L)	TapW_key	MCL (ug/L)
Acenaphthene	-	5.35E+02	n	2.20E+03	n	-
Acenaphthylene	-	-	-	-	-	-
Acetone	-	1.41E+04	n	2.20E+04	n •*	-
Aniline Anthracene	-	1.72E+03	n	1.20E+01 1.10E+04	c* n	-
Antimony	-	7.26E+00	n	1.50E+01	n	6
Arsenic (dissolved)	100	5.13E-01	С	4.50E-02	С	10
Arsenic (total)	-	5.13E-01	С	4.50E-02	С	10
Azobenzene	-	-	-	1.20E-01	С	-
Barium (dissolved)	1000	3.28E+03	n	7.30E+03	n	2000
Barium (total)	-	3.28E+03	n	7.30E+03	n	2000
Benz(a)anthracene Benzene	10	3.43E-01 4.54E+00	C	2.90E-02 4.10E-01	C	5
Benzo(a)pyrene	0.7	3.43E-02	С	2.90E-03	C	0.2
Benzo(b)fluoranthene	-	3.43E-01	С	2.90E-02	С	-
Benzo(g,h,i)perylene	-	-	-	-	-	-
Benzo(k)fluoranthene	-	3.43E+00	С	2.90E-01	С	-
Benzoic acid	-	-	-	1.50E+05	n	-
Benzyl alcohol Beryllium	-	1.24E+01	-	1.80E+04 7.30E+01	n n	4
Bis(2-chloroethoxy)methane	-	1.246+01	n -	1.10E+02	n	- 4
Bis(2-chloroethyl)ether	-	1.36E-01	С	1.20E-02	C	-
Bis(2-chloroisopropyl)ether	-	9.76E+00	С	-	-	-
Bis(2-ethylhexyl)phthalate	-	5.56E+01	С	4.80E+00	С	6
Bromobenzene	-	-	-	2.00E+01	n	-
Bromodichloromethane	-	1.34E+00	С	1.20E-01	С	-
Bromoform	-	7.545.00	-	8.50E+00	C*	-
Bromomethane 4-Bromophenyl phenyl ether	-	7.54E+00	n -	8.70E+00	n -	-
Butyl benzyl phthalate	-	-	-	3.50E+01	С	
2-Butanone (MEK)	-	5.56E+03	n	7.10E+03	n	-
Cadmium (dissolved)	10	6.24E+00	n	1.80E+01	n	5
Cadmium (total)	-	6.24E+00	n	1.80E+01	n	5
Carbazole	-	-	-	-	-	-
Carbon disulfide	10	8.10E+02	n	1.00E+03	n	5
Carbon tetrachloride Chlorobenzene	-	4.53E+00 7.76E+01	c n	2.00E-01 9.10E+01	c n	100
Chloroethane (ethyl chloride)	-	2.09E+04	-	-	-	-
Chloroform	100	2.29E+00	С	1.90E-01	С	-
Chloromethane	-	2.03E+01	С	1.90E+02	С	-
4-Chloro-3-methylphenol	-	-	-	-	-	-
4-Chloroaniline 4-Chlorophenyl phenyl ether	-	-	-	3.40E-01	С	-
4-Chlorotoluene	-	-	-	2.60E+03	n	-
2-Chloronaphthalene	-	7.33E+02	n	2.90E+03	n	-
2-Chlorophenol	-	9.10E+01	n	1.80E+02	n	-
2-Chlorotoluene	-	-	-	7.30E+02	n	-
Chromium III	50	1.36E+04	n	5.50E+04	n	-
Chromium VI	50	2.52E-01	С	1.10E+02	n	-
Chromium (Total) Chrysene	50	5.59E+00 3.43E+01	C C	2.90E+00	- C	-
Cobalt	50	3.43E+01	-	1.10E+01	n	-
Cyanide	200	1.46E+00	n	7.30E+02	n	200
Dibenz(a,h)anthracene	-	1.06E-01	С	2.90E-03	С	-
Dibenzofuran	-	-	-	-	-	-
Dibromochloromethane	-	1.68E+00	С	1.50E-01	С	-
cis-1,2-DCE	-	3.65E+01	n	3.70E+02	n	70
trans-1,2-DCE cis-1,3-Dichloropropene	-	9.32E+01 4.70E+00	n c	1.10E+02	n -	100
trans-1,3-Dichloropropene	-	4.70E+00 4.70E+00	С	4.30E-01	C	-
Dibromomethane	-	-	-	3.70E+02	n	-
1,2-Dibromo-3-chloropropane	-	3.36E-03	С	3.20E-04	С	0.2
1,2-Dibromoethane (EDB)	0.1	7.46E-02	С	6.50E-03	С	0.05

TABLE 4 Groundwater Screening Levels Bloomfield Refinery - Bloomfield, New Mexico

		NMED			EPA	
Analyte	New Mexico WQCC Standards (ug/L)	NMED Tap Water (ug/L)	TapW_key	EPA Screening Levels.Tap Water (ug/L)	TapW_key	MCL (ug/L)
1,2-Dichlorobenzene	-	3.02E+02	n	3.70E+02	n	600
1,3-Dichlorobenzene	-	-	-	-	-	-
1,4-Dichlorobenzene	-	4.81E+00	С	4.30E-01	С	75
3,3'-Dichlorobenzidine	-	1.24E+00	С	1.50E-01	С	-
Dichlorodifluoromethane	-	1.97E+02	n	3.90E+02	n	-
1,1-Dichloroethane	25	2.75E+01	С	2.40E+00	С	-
1,2-Dichloroethane (EDC)	10 5	1.71E+00	C	1.50E-01	C	5 7
1,1-Dichloroethene 2,4-Dichlorophenol	-	2.84E+02 4.53E+01	n n	3.40E+02 1.10E+02	n n	-
1,2-Dichloropropane	-	4.37E+00	C	3.90E-01	C*	5
2,2-Dichloropropane	-		-	3.30L-01	-	-
1,3-Dichloropropane	_	_	-	7.30E+02	n	-
1,1-Dichloropropene	-	_	-	-	-	-
Diethyl phthalate	-	1.48E+04	n	2.90E+04	n	-
Dimethyl phthalate	-	-	n	-	-	-
2,4-Dimethylphenol	-	3.54E+02	n	7.30E+02	n	-
4,6-Dinitro-2-methylphenol	-	1.51E+00	n	-	-	-
2,4-Dinitrophenol	-	3.88E+01	n	7.30E+01	n	-
2,4-Dinitrotoluene	-	2.37E+00	С	2.20E-01	n	=
2,6-Dinitrotoluene	-	4.84E-01	n	3.70E+01	n	-
Di-n-butyl phthalate	-	8.85E+02	n	-	-	-
Di-n-octyl phthalate	-	-	-	-	-	-
Ethylbenzene	750	1.49E+01	С	1.50E+00	С	700
Fluoranthene	-	8.02E+02	n	1.50E+03	n	-
Fluorene	-	2.88E+02	n	1.50E+03	n	-
Hexachlorobenzene	-	4.87E-01	С	4.20E-02	С	1
Hexachlorobutadiene	-	2.95E+00	С	8.60E-01	C*	-
Hexachlorocyclopentadiene	-	2.78E+01	n	2.20E+02	n C**	50
Hexachloroethane 2-Hexanone	-	6.80E+00	C -	4.80E+00	- C	-
Indeno(1,2,3-cd)pyrene	-	3.43E-01	C	2.90E-02	c	-
Iron, Total	-	1.38E+04	n	2.90L-02	n	-
Iron, Dissolved	1000	1.38E+04	n	26	n	-
Isophorone	-	7.79E+02	С	7.10E+01	C	-
Isopropylbenzene (Cumene)	-	4.47E+02	n	6.80E+02	n	-
4-Isopropyltoluene	-	-	-	-	-	-
Lead (dissolved)	50	-	-	-	-	15
Lead (total)	-	-	-	-	-	15
Magnesium	-	-	-	-	-	-
Manganese (dissolved)	200	2.02E+03	n	8.80E+02	n	-
Manganese (total)	-	2.02E+03	n	8.80E+02	n	-
Mercury	2	6.26E-01	n	5.70E-01	n	2
Methyl tert-butyl ether (MTBE)	-	1.43E+02	С	1.20E+01	С	-
Methylene chloride	100	1.06E+02	С	4.80E+00	С	5
1-Methylnaphthalene	-	-	-	2.30E+00	С	-
2-Methylnaphthalene	-	-	-	1.50E+02	n	-
2-Methylphenol	-	-	-	1.80E+03	n	-
3+4-Methylphenol 4-Methyl-2-pentanone	-	-	-	1.80E+02	n	-
Naphthalene	-	1.65E+00	C	1.40E-01	- C*	-
n-Butylbenzene	-	1.05E+00 -	-	1.40E-01	-	-
Nickel	-	3.72E+02	n	7.30E+02	n	-
2-Nitroaniline	-		-	1.10E+02	n	-
3-Nitroaniline	-	-	-	-	-	-
4-Nitroaniline	-	-	-	3.40E+00	c*	-
2-Nitrophenol	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-
Nitrobenzene	-	1.40E+00	n	1.20E-01	С	-
N-Nitrosodimethylamine	-	4.90E-03	С	4.20E-04	С	-
N-Nitrosodi-n-propylamine	-	-	-	9.60E-03	С	-
N-Nitrosodiphenylamine	-	1.21E+02	С	1.40E+01	С	-
n-Propylbenzene	-	-	-	-	-	-
	_	4.00E-01	С	5.60E-01	С	1
Pentachlorophenol						
Phenanthrene	-	1.70E+02	n	- 4.405.04	-	-
Phenanthrene Phenol	-	5.76E+03	n	1.10E+04	n	-
Phenanthrene	-					

TABLE 4 **Groundwater Screening Levels** Bloomfield Refinery - Bloomfield, New Mexico

		NMED			EPA	
Analyte	New Mexico WQCC Standards (ug/L)	NMED Tap Water (ug/L)	TapW_key	EPA Screening Levels.Tap Water (ug/L)	TapW_key	MCL (ug/L)
sec-Butylbenzene	-	-	-	-	-	-
Selenium (dissolved)	50	9.87E+01	n	1.80E+02	n	50
Selenium (total)	-	9.87E+01	n	1.80E+02	n	50
Silver (dissolved)	50	8.12E+01	n	1.80E+02	n	-
Silver (total)	-	8.12E+01	n	1.80E+02	n	-
Styrene	-	1.21E+03	n	1.60E+03	n	100
tert-Butylbenzene	-	-	-	-	-	-
Tetrachloroethene (PCE)	20	4.03E+01	С	1.10E-01	С	5
1,1,1,2-Tetrachloroethane	-	5.72E+00	С	5.20E-01	С	-
Toluene	750	1.09E+03	n	2.30E+03	n	1000
1,2,3-Trichlorobenzene	-	-	-	-	-	-
1,2,4-Trichlorobenzene	-	3.98E+00	n	8.20E+00	n	70
2,4,5-Trichlorophenol	-	1.17E+03	n	3.70E+03	n	-
2,4,6-Trichlorophenol	-	1.19E+01	n	6.10E+00	C**	-
1,2,3-Trichloropropane	-	7.47E-03	С	9.60E-03	С	-
1,2,4-Trichlorobenzene	-	3.98E+00	n	8.20E+00	n	70
1,2,4-Trimethylbenzene	-	-	-	1.50E+01	n	-
1,1,1-Trichloroethane	60	8.00E+03	n	9.10E+03	n	200
1,1,2,2-Tetrachloroethane	10	7.57E-01	С	6.70E-02	С	-
1,1,2-Trichloroethane	10	4.15E-01	С	2.40E-01	С	5
Trichloroethene (TCE)	100	2.82E+00	n	1.70E+00	С	5
Trichlorofluoromethane	-	1.14E+03	n	1.30E+03	n	-
1,3,5-Trimethylbenzene	-	-	-	1.20E+01	n	-
Vanadium	-	6.31E+01	n	2.60E+02	n	-
Vinyl chloride	1	2.01E-01	С	1.60E-02	С	2
Xylenes, Total	620	1.93E+02	n	2.00E+02	n	10000
Zinc	10000	5.96E+03	n	1.10E+04	n	-
General Chemistry						
Alkalinity	-	-	-	-	-	-
Bicarbonate	-	-	-	-	-	-
Carbonate	-	-	-	-	-	-
Calcium	-	-	-	-	-	-
Chloride	250000	-	-	-	-	-
Fluoride	1600	1.18E+03	n	-	-	-
Iron	1000	1.38E+04	n	2.60E+04	n	-
Nitrite	-	1.97E+03	n	3.70E+03	n	1000
Nitrate (NO3 as N)	10000	3.16E+04	n	5.80E+04	n	10000
Potassium	-	-	-	-	-	-
Sodium	-	-	-	-	-	-
Sulfate	600000	-	-	-	-	-
Total Dissolved Solids	1000000	-	-	-	-	-
Motor Oil Range Organics (MRO)	-	-	-	-	-	-
Diesel Range Organics (DRO)	-	-	-	-	-	-
Gasoline Range Organics (GRO)	-	-	-	-	-	-
c cancer * = where n SI < 100Y c S			•	•		

c - cancer, * = where n SL < 100X c SL, ** = where n SL < 10X c SL

620 - Bolded value is applicable screening level

- no screenig value currently available

EPA - Regional Screening Levels (April 2009)

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

NMED Tap Water - Dec. 2014 New Mexico Env. Dept. Risk Assessment Guidance for Soil Investigations and Remediation

n - noncancer

TABLE 5
Soil Boring Samples - Vapor Screening Results
Bloomfield Refinery - Bloomfield, New Mexico

Sample	SWAM 140 4	CAMMII 40.0	0.041140.0	CA 11 140 A	C14/14/11 40 0	C14/14/11 40 0	CA 114 A A	C14//41 1 42 F	0 64114440	7 07 119070	S14/4/1 42 0	0.00011400	01/01/140/40
Interval Depth	3vviviO 12-1	SVVIVIO 12-2	SVVIVIO 12-3	SVVIVIO 13-1	SVVIVIO 13-2	SVVIVIO 13-3	SVVIVIO 13-4	30VIVIO 13-3	34VIVIO 13-0	SVVIVIO 13-7	SVVIVIO 13-0	S-CI DIMINO	SWIND 13-10
0 - 0.5'	10.1	177	1420	1.8	16.9	5.5	15.3	41	10.6	295	184	Not Accessible	310
0.5 – 2'	17.3	126	3046	24.9	13.7	7.0	18.2	118.0	269.0	1636.0	2245.0		394
2-4'	NR	0.79	3481	119.0	23.5	8.9	62.0	821.0	157.0	1584.0	1779.0		27
4 – 6'	455.0	0.07	1934.0	373.0	51.5	5124.0	695.0	835.0	103.0	360.0	218.0		105
.8 – 9	150.0	396.0	1977	344	35.5	3160.0	1781.0	NR	128.0	345.0	236.0		66
8 –10'	151.0	88.8	9808	369	15.2	3263.0	1065.0	840.0	138.0	392.0	262.0		69
10 – 12'	130.0	107.0	2020	499	19.7	3912.0	646.0	1250.0	179.0	364.0	167.0		101
12 – 14'	111.0	149.0	2771.0	4390	260	4454.0	190	761.0	170.0	358.0	328		110
14 – 16'	102.0	130.0	1432	3148	262	4107.0	162	682.0	142.0	226.0	235		123
16 – 18'	30.0	88.0	1817.0	4100	240	4473.0	193	831.0	153.0	91.0	220		135
18 – 20'	NR	92.0	2221.0	NR	256	4890.0	217	1177.0	02	40.0	130		145
20 – 22'	30.0	134.0	1341.0	3950.0	413	4029.0	85	1512.0	9.08	63.0	116		492
22 – 24'	135.0	71.0	3295.0	4040	1745	4615.0	537	1575.0	258	1560.0	3784		2350
24 – 26'	325.0		2417	2632	1985	2938.0	4009	1550.0	1542		3494		4588
26 – 28'			1284	3130	1481	4054.0							3138

3-13 SWMU 13-14 S	SWMU 13-13 SWMU 13-14 Si	SWMU 13-11 SWMU 13-12 SWMU 13-13 SWMU 13-14 SWMU 13-15 SWMU 13-16 SWMU 13-17 SWMU 13-18 SWMU 13-19 SWMU 13-20
10.3 36.1	┝	10.3
2210.0 15.6		2210.0
2012.0 30.0		2012.0
1858.0 111.0		1858.0
1579.0 438.0		1579.0
450.0 2510.0		450.0
315 4345.0		315
546 4556.0		546
203 4236.0		203
430 3549.0		430
625 NR		625
1247 701.0		1247
0 1019 NR		1019
0 2596 2939.0		2596
2625	3636	3030

10						_									
SWMU 14-5	23.5	22.7	23.2	33.4	169	200	190	322	904	1223	1117	3015	3825	3082	3150
SWMU 14-4	52.6	93.8	65.0	55.0	108.0	49.0	45.0	54.0	09	NR	867				
SWMU 14-3	1515	2149.0	NR	6428.0	5314.0	3654.0	4300.0	4377.0	3722	1260					
SWMU 14-2	120	160.0	0.78	35.0	110.0	120.0	100.0	130.0	NR	NR	2047	6434			
SWMU 14-1	25.5	24.1	24.6	25.1	62.0	116.0	100.0	88.0	65.5	45	8581				
SWMU 13-30	1.3														
SWMU 13-29	1.2														
SWMU 13-28	6:0														
SWMU13-27	2.0														
SWMU 13-26	1.8														
SWMIU 13-24 SWMIU 13-25 SWMIU 13-26 SWMIU 13-27 SWMIU 13-28 SWMIU 13-30 SWMIU 14-1	3.1														
SWMU 13-24	1.1														
Sample Interval Depth	0 - 0.5'	0.5 – 2'	2 – 4'	4 – 6'	.8 – 9	8 –10'	10 – 12'	12 – 14'	14 - 16'	16 - 18'	18 – 20'	20 – 22	22 – 24'	24 – 26'	26 – 28'

NR - no recovery Units - parts per million

lable b	Soil Analytical Results Summary	Bloomfield Refinery, Bloomfield, New Mexico
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SWMU 13-2 (26-28')	377-006		Ī	200	0.16	Ī	2.6	3.8	10		2.8	Ī	19	16	4			I					I		9.5					2.3	П		46	-			7.9															T	
100 007 0 07 11111110	005 1409E	3	< 2.6	170		< 0.10	5.7 NA	3.1	2.4	AN	2.2 7.2 B	< 0.26	21	15	< 0.03		< 0.51	< 0.51	< 0.51	< 0.51	< 0.51	< 1.0	v 1.0	0.1.0	0.3	< 1.0	< 0.51	< 0.51	× 0.51	(C) /	< 0.51	< 0.51	< 0.51	< 1.0	< 5.1	< 0.51	3.2	< 0.51	< 0.51	× 5.1	< 7.0	< 0.51	< 0.51	< 0.51	v - v	< 0.51	< 0.51	× 1.0	< 0.51	< 0.51	< 0.51	< 0.51	
SWMU 13-2 (24-26')	4 1409B77-	9	< 2.0 1 < 2.6	0	9 < 0.15	< 0.10	Y 9	4	61	NA	7.08	< 0.26	9	0	< 0.22		< 0.26	< 0.26	20.20 20.20	< 0.26	< 0.26	< 0.52	< 0.52	× 0.52	0.50	< 0.52	< 0.26	< 0.26	97.0 >	< 0.26	< 0.26	< 0.26	97.0 ×	< 0.52	< 2.6	< 0.26	0.2.	< 0.26	< 0.26	< 2.6	4 × 3.9	< 0.26	< 0.26	< 0.26	× 0.78	< 0.26	< 0.26	< 0.52	× 0.26	< 0.26	< 0.26	< 0.26	
('S-2.0) S-E1 UMWS	1409B77-004	,	S 2.1	200	0.49	< 0.11	NA	22	1	W	., 200	< 0.27	3 26	10	< 0.036		< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.0101	< 0.00202	< 0.00404	< 0.00202	< 0.00202	< 0.0101	< 0.0000 >	< 0.00202	< 0.00202	< 0.00202	< 0.00303	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202 < 0.00202	
SWMU 13-1 (26'28')	1409B77-003	L C	< 2.5	380	< 0.15	< 0.10	NA 2.1	4.2	5.6	NA	.2.	< 0.25	23	23	< 0.034		< 0.50	< 0.50	0.50	< 0.50	< 0.50	66'0 >	66.0 >	66.0 ×	3.6	66:0 >	< 0.50	< 0.50	0.50	3.6	< 0.50	< 0.50	< 0.50	66.0 >	< 5.0	< 0.50	0.0	< 0.50	< 0.50	< 5.0	c / .5	< 0.50	< 0.50	< 0.50	4.1.5 4.5.0	< 0.50	< 0.50	< 0.99	< 0.50	< 0.50	< 0.50	< 0.50	
(12-14')	1409B77-002		< 5.7	250	0.74	< 0.23	NA 9.2	6.4	6.3	NA	9.6	< 0.57	30	42	< 0.03/		< 1.8	8.1.8	8.1.8	< 1.8	< 1.8	< 3.7	< 3.7	< 3.7	13	< 3.7	< 1.8	< 1.8	8.1.8	11	< 1.8	8.1.8	< 7.4	< 3.7	< 18	× 1.8	< 7.4	< 1.8	< 1.8	4 18	278	< 1.8	< 1.8	× 1.8	< 18	< 1.8	< 1.8	< 3.7	8.55	< 1.8	< 1.8	× 1.8	
('S-2.0) 1-E1 UMWS	1409B77-001		3.2	160	0.5	< 0.11	NA 6.6	4.9	4.5	NA	, 2 g	< 0.28	25	29	< 0.038		< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	0.00668	< 0.00178	< 0.00178	< 0.00178	< 0.00178	0.00493	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00891	< 0.00178	< 0.00356	< 0.00178	< 0.00178	< 0.00891	0.0705	< 0.00178	< 0.00178	< 0.00178	< 0.00267	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	
2MWN 15-3 (5e-58,)	1409C40-005 9/23/2014		< 2.5 < 2.5	210	0.16	< 0.10	7.6	3.6	1.3	NA	7.2 2.4	< 0.25	22	17	< 0.036		< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.50	< 0.50	< 0.50	5.0.23	< 0.50	< 0.25	< 0.25	< 0.25	2.1	< 0.25	< 0.25	< 0.25	< 0.50	< 2.5	< 0.25	2.9	< 0.25	< 0.25	< 2.5	< 0.25	< 0.25	< 0.25	< 0.25	< 0.75	< 0.25	< 0.25	< 0.50	< 0.25	< 0.25	< 0.25	< 0.25	
SWMU 12-3 (22-24')	1409C40-004		< 2.6	110	< 0.16	< 0.10	NA 4.7	3.1	1.3	NA	2.8	< 0.26	12	15	< 0.035		< 0.067	290.0 >	/90.0 >	< 0.067	< 0.067	< 0.13	< 0.13	< 0.13	< 0.067	< 0.13	< 0.067	< 0.067	/90.0 >	< 0.067	< 0.067	290.0 >	/90.0 >	< 0.13	< 0.67	< 0.067	< 0.27	< 0.067	< 0.067	< 0.67	< 0.067	290'0 >	< 0.067	< 0.067	0.20 >	290:0 >	< 0.067	< 0.13	/90.0 >	290'0 >	290'0 >	< 0.067	
SWMU 12-3 (2-4')	1409C40-003 9/23/2014	007	< 2.6		0.19	< 0.11	NA 2.5	2.5	3.2	NA	30 %	< 0.26	12	16	< 0.036		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 0.20	< 0.20	< 0.10	< 0.20	< 0.10	< 0.10	× 0.10	< 0.10	< 0.10	< 0.10	< U.10	< 0.20	< 1.0	< 0.10	< 0.41	< 0.10	< 0.10	× 1.0	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 1.0	< 0.10	< 0.10	< 0.20	< 0.10	< 0.10	< 0.10	o 0.10	
('S-2.0) E-S1 UMWS	1409C40-002 9/23/2014	1	< 2.7	120	0.29	< 0.11	NA 4.6	3.2	5.6	NA	4.5	< 0.27	16		< 0.036		> 0.66	99.0	< 0.05 < 0.66	< 0.66	99'0 >	< 1.3	× 1.3	× 1.3	< 0.66	< 1.3	> 0.66	> 0.66	99.0 >	99.0 >	> 0.66	99.0 >	< 0.05	< 1.3	9.9 >	99.0 >	4.4	> 0.66	99.0 >	9.6	8.8 >	99.0 >	> 0.66	99.0 >	0.2.0	99.0 >	99'0 >	< 1.3	< 0.66	99.0 >	99.0 >	0.00 0.00 0.00	
(9-0-5) (9-0-5)	1409C40-001		< 2.5	160	0.26	< 0.10	NA 5.6	3.8	4.6	NA	4.1	< 0.25		38	< 0.24		< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.065	< 0.065	90.05	< 0.032	< 0.065	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.065	< 0.32	< 0.032	< 0.13	< 0.032	< 0.032	< 0.32	< 0.48	< 0.032	< 0.032	< 0.032	< 0.097	< 0.032	< 0.032	< 0.065	< 0.032	< 0.032	< 0.032	< 0.032	
SWMU 12-2 (22-24')	1409C40-009		< 2.5	180	0.16	< 0.10	NA 4.4	3	1.5	NA	2.4 2.5	< 0.25	19	17	< 0.033		< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	> 0.098	< 0.098	< 0.098	< 0.049	> 0.098	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	> 0.098	< 0.49	< 0.049	< 0.20	< 0.049	< 0.049	< 0.49	< 0.74	< 0.049	< 0.049	< 0.049	< 0.15	< 0.049	< 0.049	> 0.098	< 0.049	< 0.049	< 0.049	< 0.049	
SWMU 12-2 (6-8')	1409c40-008		5 2.0	330	0.47	< 0.11	7.9	4.4	7.1	NA	, 38	< 0.28	23	97	< 0.26		< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.72	< 0.72	< 0.72	< 0.36	< 0.72	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.72	< 3.6	< 0.36	4.8	< 0.36	< 0.36	< 3.6	< 0.36	< 0.36	< 0.36	< 0.36	< 3.6	< 0.36	< 0.36	< 0.72	< 0.36	< 0.36	< 0.36	< 0.36	
('S-8.0) S-S1 UMW8	1409C40-007		5.20	230	0.41	0.21	7	4.2	7.4	W	6.3	< 0.26		42	< 0.24		< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	690'0 >	< 0.069	< 0.069	< 0.035	< 0.069	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.069	< 0.35	< 0.035	< 0.14	< 0.035	< 0.035	< 0.35	< 0.02	< 0.035	< 0.035	< 0.035	< 0.35	< 0.035	< 0.035	< 0.069	< 0.035	< 0.035	< 0.035	< 0.035	
(-6-0-5) (-6-0-5-0)	1409C40-006		< 2.1	330	0.39	0.25	NA 8.5	4.2	7.6	NA	6.7	< 0.27	20	42	0.085		< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.32	< 0.32	< 0.32	< 0.16	< 0.32	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.32	< 1.6	< 0.16	< 0.65	< 0.16	< 0.16	< 1.6	< 2.4	< 0.16	< 0.16	< 0.16	< 0.48	< 0.16	< 0.16	< 0.32	< 0.16	< 0.16	< 0.16	< 0.16	
SWMU 12-1 (24-26')	1409E44-003		< 2.6	250	< 0.15	< 0.10	7.6	5.4	0.36	NA	3.6	< 0.26	22	19	< 0.032		< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195 0.00823	< 0.00195	< 0.00976	< 0.00195	0.00734	< 0.00195	< 0.00195	< 0.00976	0.0124	< 0.00195	< 0.00195	< 0.00195	< 0.00293	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	
(4-6')	1409e44-002		3.1	170	0.54	< 0.11	7.2	4.6	13	NA	, 86.	< 0.28	25	30	< 0.036		< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.0107	< 0.00214	< 0.00427	< 0.00214	< 0.00214	< 0.0107	0.0553	< 0.00214	< 0.00214	< 0.00214	< 0.00320	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	< 0.00214	
('S-2.0) 1-S1 UMWS	1409e44-001		3.1	160	0.39	< 0.11	NA 80	4.4	13	NA	8.7	< 0.27	22	- 1	< 0.035		< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191 < 0.00383	< 0.00191	< 0.00957	< 0.00191	< 0.00383	< 0.00191	< 0.00191	< 0.00957	0.0279	< 0.00191	< 0.00191	< 0.00191	< 0.00287	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	
Source	1	-	_	(8)	\neg	_		(6)		\neg	т	-		(8)	(8)		(8)	(8)	(8)	(8)	(8)	ŀ	4	(8)	(6)	Ц	(8)	(8)	(8)	┸		(6)	(8)	(6)	(8)	_	. (6)				(8)	(6)	Ц	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(8)	
Leachate DAF (11.25) Saing/kg)		00. 100.0	3.09E+00	1.52E+03	1.10E+02					_	2.73E+02	-			3.68E-01		2.02E-02	2.87E+01	2.70E-03	7.64E-02	1.10E+00			2.93E-05	_	-		2.57E+00		2.25E-01		3.04E+00			1.13E+01	_		3.15E+01		2.70E+00			щ	-	7.93E-02	-	ш	6.04E+01	_			4.24E-03	
Non- Residential Soil Screening 90		ΙF	Т	4.35E+03 (5)	П	7.21E+01 (5)	T	T	8.00E+02 (4)	3.54E-02 (5)	4 75E±03 (5)	T	П	7	1.21F+01 (5)	1	┪	7	3.94E+01 (4)	Т	T			+	+	П	П	2.50E+03 (5)	2.67E+01 (4)	+	П	2.00E+04 (6)	Т	Т	9.17E+04 (5)	7.08E+03 (5)	4.10E+03 (6)	7.20E+04 (6)	П	2.02E+04 (5)	T	Т	П	7	1.79E+01 (5)	t	П	1.66E+04 (5)	$^{+}$	T	H	1.00E+04 (6)	1
Source		Ιſ	3 3	Т	T	£ 3	T	T	(1)	П	3	Т	П	Т	9 3	1	П	Т	3 3	Т	Г	ŀ	T	(3)	T	П	П	T	T	(5)	П	(2)	T	T	П	3	. (2)	П	П	T	3 3	Т	П	€ 3	8 8	T	(1)	£ 3	Ť	3	H	(2)	l
Residential Soil Seraenim I avail	2	107	3.13E+0	1.56E+04	1.56E+02	7.05E+01	3.05E+00	2.30E+01	4.00E+02	6.16E-03	1.56E+00	3.91E+02	3.94E+02	2.35E+04	2.38E+01	4	4	1.44E+04	7.98E+00	7.86E+01	4.40E+02		. 107	5.10E-02	6.70E+01	8.58E-02	6.72E-01	2.15E+03	8.32E+00	4.70E+01		1.60E+03	3.28E+01	-	3.74E+04	1.56E+03	3.10E+02	5.50E+03		5.81E+03	0.63E+04	9.40E+01	6.19E+00	6.74E+02	1.77E+01	1.07E+01	3.78E+02	1.90E+04	5.90E+0C	1.56E+02	2.93E+01	7.80E+02	
Analyses	riuly vo	ng/kg)					milimo			yl Lead						Volatile Organic Compounds - (EPA Method 8260) mg/kg	,1,2-Tetrachloroethane	hloroethane	1,2,2-1 etrachloroethane	roethane	1,1-Dichloroethene	,1-Dichloropropene	hlorobenzene	2.3-1 nchloropropane	2.4-Trimethylbenzene	2-Dibromo-3-chloropropane	1,2-Dibromoethane (EDB)	,2-Dichlorobenzene	1,2-Dichloroethane (EDC)	.3.5-Trimethylbenzene	Dichlorobenzene	1,3-Dichloropropane	orobenzene antithalane	ropropane	ne (MEK)	oluene	riexariorie Methylnapitithalene	luene	yltoluene	4-Methyl-2-pentanone (methyl isobutyl ketone)		zene	hloromethane	EI	Bromometrane Carbon disulfide	trachloride	Chloroberzene	Chloroethane (ethyl chloride)	H	30	chloropropene	Dibromochloromethane Dibromomethane	
		Metals (mg/kg)	Antimony	Barium	Beryllium	Cadmium	Total Chromium	Cobalt	Lead	Tetraethyl Lead	Nickel	Silver	Vanadium	Zinc	Cvanide	Volatile (1,1,1,2-T	1,1,1-Tnc	1,1,2,2-I	1.1-Dichlc	1,1-Dichk	1,1-Dichk	1,2,3-Tric	1,2,3-1 nc	1.2.4-Trin	1,2-Dibro	1,2-Dibro	1,2-Dichk	1,2-Dichle	1.3.5-Trin	1,3-Dichk	1,3-Dichk	1,4-Dichk	2,2-Dichlc	2-Butano.	2-Chlorot	2-Methyln	4-Chlorot	4-Isoprop	4-Methyl-	Renzene	Bromobe	Bromodic	Bromofor	Carbon di	Carbon te	Chlorobe,	Chloroeth	Chlorotol	dis-1,2-DCE	cis-1,3-D	Dibromon	

Table 6
Soil Analytical Results Summary
Bloomfield Refinery, Bloomfield, New Mexico

SWMU 13-2 (26-28')	409B77-006	9/22/2014	100	10	0.83	0.00	1.5	1.5	2.2	3.2	0.54	0.51	0.51	0.51	0.51	0.51	0.51	< 0.51	0.51	9.9		200	< 0.21	0.21	3.2	0.21	0.21	0.42	0.31	0.52	0.52	1.26	0.20	5.3	0.52	0.21	0.21	0.21	0.20	0.52	0.21	0.52	0.52	0.21	1.26	0.21	0.21	0.21	0.21	0.21	9.21	0.21	0.21	0.21	0.52	0.21	0.21	< 0.21	
2-52 (24-26')	5	9/22/2014		V	Ì	0.20	> 0.78	> 0.78	: 0.26	0.81	< 0.26	< 0.26	20.00	0.20	V	: 0.26	Ė		< 0.26	< 0.52	Ī	2021	Ī	: 0,21	1.2	< 0.21	c 0.21	× 0.42	< 0.31	< 0.52	< 0.52	20.0	0.20	1.9	< 0.52	< 0.21	< 0.21	< 0.21	1021	0.52	: 0.21	< 0.52	< 0.52 < (50.21	0.05	< 0.21 < 0	V	V	< 0.21 <	< 0.21	:0.21	: 0.21	< 0.21	V	< 0.52 < 0	× 0.21	< 0.21		
('S-8.0) S-E1 UMWS	1409B77-004	9/22/2014	0.00202	0.00202	- 0.00000	0.00202	< 0.00202	< 0.00202	< 0.00202 <	< 0.00202	< 0.00202	< 0.00202	× 0.00202	< 0.00202	< 0.00202	< 0.00202 <	< 0.00202	~	< 0.00202 <	< 0.00202	Γ	T	< 0.23	c0.23	₹0.23	< 0.23	< 0.23	< 0.45	< 0.34 ×	< 0.57	< 0.57	70.07	< 0.20	Ĺ	< 0.57	< 0.23	< 0.23	< 0.23	20.20	> 0.57	< 0.23 <	>	V !	× 0.23	/ V	< 0.23			< 0.23	< 0.23	10.23 ×	< 0.23	< 0.23	23	< 0.57	× 0.23	< 0.23	İ	
SWMU 13-1 (26'28')	1409B77-003	9/22/2014	20.00	00 0 >	0.00	0.00	× 1.5	< 1.5	1.8	3.2	< 0.50	< 0.50	0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	6.9		2.0.2	< 0.21	< 0.21	1.8	< 0.21	< 0.21	< 0.41	< 0.31	< 0.52	< 0.52	20.02	< 0.20	2.6	< 0.52	< 0.21	< 0.21	< 0.21	< 0.20	< 0.52	< 0.21	< 0.52	< 0.52	< 0.21	< 0.26	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.21	< 0.21	
SWMU 13-1 (12-14')	1409B77-002	9/22/2014	0.1	< 3.7	, v	, v	25.5	< 5.5	4	< 3.7	< 1.8	v 1.8	N 1.8	10	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	110	0000	0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.46	< 0.34	< 0.57	< 0.57	0.00	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.23	< 0.29	< 0.57	< 0.23	< 0.57	< 0.57	< 0.23	< 0.40	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.23	
('S-8.0) 1-E1 UMWS	1409B77-001	9/22/2014	< 0.00178	< 0.00178	0.000128	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	× 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	0.00591	0000	> 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.46	< 0.34	< 0.57	< 0.57	0.07	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.23	< 0.23	< 0.57	< 0.23	< 0.57	< 0.57	< 0.23	× 0.40	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.23	
SWMU 12-3 (26-28')	409C40-005	9/23/2014	0.20	0.50	0.00	0.20	0.75	0.75	0.82	1.2	0.25	0.25	0.25	0.25	0.25	0.25	0.25	< 0.25	0.25	3.3		0.21	< 0.21	< 0.21	2.2	0.21	0.21	0.41	0.31	0.52	0.52	0.92	0.20	3.2	0.52	0.21	0.21	0.21	0.20	0.52	0.21	0.52	0.52	0.21	0.26	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.52	0.21	< 0.21	: 0.21	
SWMU 12-3 (22-24')	14 09 C 40 - 004 14	9/23/2014	0.007	ľ	7 0 067	0.00	0.20	0.20	290'0 :	0.13	> 290.0	> 20.067	0.067		_	7			< 0.067	0.13	Γ	T	< 0.21			> 0.21	> 0.21	. 0.42	0.31	0.52 <	0.52	0.02	0.20	0.21	. 0.52	. 0.21	. 0.21	0.21	0.20	0.52	> 0.21	: 0.52	0.52 <	0.21	0.42	0.21	> 0.21	> 0.21	: 0.21	0.21	0.21	> 0.21	> 0.21	0.21	0.52	< 0.21		Ħ	
SWMU 12-3 (2-4')	1409C40-003	9/23/2014	0.00	0.00	0.00	0.0	< 0.31	< 0.31	< 0.10	< 0.20	< 0.10	< 0.10	0.10	0.00	< 0.10	< 0.10	٧	< 0.10	Ì	< 0.20	Γ	T			< 0.42	< 0.42	< 0.42	< 0.85	< 0.63	v 1.1	1.1	V 0.53	ľ	< 0.42	< 1.1	< 0.42	< 0.42	< 0.42	< 0.33	×1.1	< 0.42	< 1.1	41.1	× 0.42	< 0.63	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	7.1	T	< 0.42	Ħ	
('S-2'0) 8-31 UMWS	1409C40-002	9/23/2014	00.00	× 1.3	9907	00.02	< 2.0	< 2.0	> 0.66	< 1.3	> 0.66	> 0.66	0.00	× 0.00 × 0.66	> 0.66	> 0.66	> 0.66	> 0.66	> 0.66	< 1.3		2.5	< 2.2	< 2.2	11	< 2.2	01	< 4.4	< 3.3	< 5.5	< 5.5	20.0	< 2.2	11	< 5.5	< 2.2	< 2.2	< 2.2	< 2.7	5.5	< 2.2	< 5.5	< 5.5	2.2 >	4 4 4	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 5.5		< 2.2		
('6.0-0) £-21 UMWS	1409C40-001	9/23/2014	< 0.032	< 0.032	0000	< 0.032	< 0.097	< 0.097	< 0.032	< 0.065	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.065	70.00	4 6	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.82	< 0.62	< 1.0	0.1.0	× 0.52	< 0.02	< 0.41	< 1.0	< 0.41	< 0.41	< 0.41	< 0.32	× 1.0	< 0.41	< 1.0	< 1.0	× 0.4	< 0.62	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	× 1.0	< 0.41	< 0.41	< 0.41	
SWMU 12-2 (22-24')	1409C40-009	9/23/2014	0000	× 0.048	0.000	4 0 049	< 0.15	< 0.15	< 0.049	3 < 0.098	< 0.049	< 0.049	× 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.098	70.07	70.07	> 0.21	< 0.21	6 < 0.21	< 0.21	< 0.21	< 0.41	< 0.31	< 0.52	< 0.52	20.0 >	× 0.20	1 < 0.21	< 0.52	< 0.21	< 0.21	< 0.21	< 0.20	< 0.52	< 0.21	< 0.52	< 0.52	< 0.2	< 0.26	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.21	< 0.21	
SWMU 12-2 (6-8')	7 1409c40-008	9/23/2014	0.00	< 0.30	27.07	9,00	1.1	1.1	< 0.36	4.0	< 0.36	< 0.36	× 0.36	× 0.30	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.72	000	667	× 2.3	< 2.3	8.	< 2.3	< 2.3	< 4.6	< 3.4	< 5.7	< 5.7	000	< 23	9	< 5.7	< 2.3	< 2.3	< 2.3	× × × ×	< 5.7	< 2.3	< 5.7	< 5.7	< 2.3 < 4.6	0 t v	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 5.7	< 2.3	< 2.3	< 2.3	
('S-8.0) S-S1 UMWS	006 1409C40-00	9/23/2014	V 0.035	0.033	0.000	× 0.035	< 0.10	< 0.10	< 0.035	< 0.069	< 0.035	< 0.035	× 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.069	007	2.27	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 4.4	< 3.3	< 5.5	< 5.5	< 0.0	< 2.7	< 2.2	< 5.5	< 2.2	< 2.2	< 2.2	< 2.7	55.5	< 2.2	< 5.5	< 5.5	2.2 >	< 2.7	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 5.5	< 2.2	< 2.2	< 2.2	
(9-0-0) 2-21 NMWS	3 1409C40-00	9/23/2014	0.07	× 0.10	0.02	0.00	< 0.48	< 0.48	< 0.16	< 0.32	< 0.16	< 0.16	4 0.16	× 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.32	007	2.2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 4.4	< 3.3	< 5.5	< 5.5	2 0 V	< 2.2	< 2.2	< 5.5	< 2.2	< 2.2	< 2.2	< 2.2	5.5	< 2.2	< 5.5	< 5.5	2.2 >	< 2.7	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 5.5	< 2.2 >	< 2.2	< 2.2	
SWMU 12-1 (24-26')	02 1409E44-0	9/24/2014	× 0.00195	< 0.00193	4 0 00195	< 0.00135	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	× 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	000	0.00	0.00 >	< 0.20	< 0.20	< 0.20	< 0.20	< 0.41	< 0.31	< 0.51	< 0.51	0.0 >	× 0.20	< 0.20	< 0.51	< 0.20	< 0.20	< 0.20	< 0.20	< 0.51	< 0.20	< 0.51	< 0.51	< 0.20	< 0.4	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.51	< 0.20	< 0.20	< 0.20	
(4-6')	01 1409e44-0	9/24/2014) C	П				< 0.00214	H			< 0.00214 4 0.00214		< 0.00214	l	< 0.00214		- 1		20.0	V 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.90	< 0.67	v 1.1	v ,	- V	< 0.30	< 0.45	< 1.1	< 0.45	< 0.45	< 0.45	< 0.36	1.1	< 0.45	< 1.1	× 1.1	0.45	< 0.56	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	× 1.1	< 0.45	< 0.45	< 0.45	
('S-8.0) 1-S1 UMWS	1409e44-001	9/24/2014		П	L	× 0.00191		L	< 0.00191	Ц	Ш	< 0.00191	1	┸	L			Ш	< 0.00191	╝	****	107	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.88	> 0.66	v 1.1	V .	- V V	× 0.33	> 0.44	< 1.1	< 0.44	< 0.44	< 0.44	< 0.33	V 1.1	> 0.44	< 1.1	v 1.1	× 0.44	× 0.55	< 0.44	< 0.44	< 0.44	< 0.44	× 0.44	4 0 v	< 0.44	< 0.44	> 0.44	v 1.1	< 0.44	× 0.44	< 0.44	
Leachate DAF (11.25)		00:120 #	1.48E.01 (e)	Т.	4.04 LOG (6)	3.11E-01 (8)	2.65E-01 (8)	+	t	4.63E-02 (8)	Н	1.16E+01 (8)	. 00	+	-	1.57E-02 (8)		8.82E+00 (8)	7.59E-04 (8)	.68E+00 (8)	00 100	9.92E-02 (6)	(0)	-	1.69E-01 (9)	-	-	п	+	3.77E-01 (8)	т	3.21E±01 (8)	+		2.25E+01 (9)	3.71E-01 (9)		2.14E+00 (9)	70	2.22E-02 (8)	t	П	1.35E-03 (9)	1 13E 03	Ť	4.64E+01 (8)		3.83E-02 (9)		_	3.40E-01 (8)	-	-	_		2 50E 01 (0)		2.66E-02 (8)	
Source		100	9	£) (£)	(2)	(4)	(2)	,		(2)		(2)	. (4)	(2)	(2)	(2)	(5)	(2)	(4)	(2)	í	(2)	3	(4)	(2)	(2)	(2)	(2)	(2)	(2)	(4)	(5)	(5)	(9)	(9)	(9)	- 1	(9)	į,	(2)			6	. 6	,	(2)	•	(7)	(2)	6	£ 4	(4)	H	(4)	(9)	(9)	(2)	(4)	
Non- Residential Soil Screening		4 647.00	(1) 3 69E+			(1) Z./*E+03	1	1		(1) 1.59E+02		(1) 1.02E+04	1 2001	ļ	_	(1) 1.30E+02	_	_	_	(1) 7.98E+	T 2021	(1) 7.915401		L	(3) 9.90E+		ᆫ	Ц	4	(1) 5.38E+02	4	(1) 2 83E404	⊥	┸	(2) 3.10E+04	(2) 1.80E+		(2) 3.10E+03	D	(1) 2.15F+01	L	Ш	(3) 8.60E+01		┸	(1) 1.51E+04	上	Ш	(1) 7.53E+04		(1) 3.23E+00	上	Ц	4	(2) 2.50E+	(2) 3.10E+05	Ш	ш	
Residential Soil Screening 1 and	8	4 001	T	Т	T	0.75E+03	Т	T		4.97E+01		7.26E+03	. 447	Ť	t	2.93E+01	П	П	T	7		9 455+01		t	t	T	T	1.85E+02	7	1.23E+02	1	Ť	T	Т	3.10E+03	П	T	3.10E+02	Τ	4 93F+00		П	2.40E+00	- 0 400 - 0	Ť	3.48E+03	T	П	П	T	1.53E-01	T	П	T	T	3.10E+04	Ť	П	
Analyses	ranjan.	100	POLICIO DI INTERIBILIE	urybenzene exachlomhitadiene	committee (cimone)	Sopropyroelizere (currents)	ethylene chloride	1-Butybenzene	Propylbenzene	aphthalene	ec-Butylbenzene	tyrene	ert-Butylbenzene	etracilioremente (r.C.E.)	trans-1.2-DCE	trans-1,3-Dichloropropene	Trichloroethene (TCE)	richlorofluoromethane	Vinyl chloride	Xylenes, Total	emi Volatile Organics - (EPA Method 82/0) mg/kg	2 Dichloroborano	3-Dichlorohenzene	4-Dichlorobenzene	Methylnaphthalene	2,4,5-Trichlorophenol	4,6-Trichlorophenol	,4-Dichlorophenol	,4-Dimethylphenol	,4-Dinitrophenol	4-Dinitrotoluene	O-Dilling Columnia Chloronauchthalana	-Cilotorianianianianianianianianianianianianiani	-Metryinaphthalene	-Methylphenol	-Nitroaniline	-Nitrophenol	+4-Methylphenol	Nitroaniline	-1-41 Carlinite 6-Dinitro-2-methylphenol	-Bromophenyl phenyl ether		4-Chloroaniline	4-Unoropnenyi pnenyi etner 4 Mitropolina	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	nthracene	zobenzene	enzjajanuracene enzojajpyrene	enzo(b)fluoranthene	Benzo(g,h,i)perylene	enzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	is(z-chloroethyl)ether	Bis (2-chlorois opropyl)ether	

Table 6 Soil Analytical Results Summary Bloomfield Refinery, Bloomfield, New Mexico

					('S-3.0) r	(4-6')	1 (24-26')	(0-0.5')	در (0.5-2°)	(-8-9) z-7	2 (22-241)	('č.0-0) E-	('S-8.0) E-	6-3 (2-41)	3 (22-241)	3 (26-28')	۱ (۵.5-2)	1 (12-14.)	(56'28')	(°5-2') S	2 (24-26')	5 (26-28')
Analytes	Residential Soil	Non- Residential Soil Screening Level	Source	Leachate DAF (11.25) CO (mg/kg) SoilGW	-SI UMWS	ZI NWMS	-SI UMWS	-SI NWMS	-SI NWWS	ZI NWWS	-SI UMWS	-SI NWWS	-SI NWWS	SI UMWS	-SI UMWS	-SI UMWS	-EI NWMS	-EI UMWS	-EI NWMS	-EI NWWS	-£1 UMWS	-EI UMWS
					1409e44-001	1406	2 1	-	1409C40-007	œ	æ	5	2	8	¥	1409C40-005	1409B77-001	1409B77-002	1409B77-003	4	9	1409B77-006
() or the discontinuity of the	0 00000	4 00000	L	l.	I	9/24/2014	+	9/23/2014	V2014	23/2014	2014	V2014	9/23/2014	3/2014	2014	9/23/2014	9/22/2014	9/22/2014	2014	/2014	2014	9/22/2014
Sis(z-ernyinexyi)prinalate	3.80E+02 (1)		7 7 5	7.54E±00 (8)	V - V	N 1.1	v 0.50	0.00	Ī	V V	× 0.52	0.1.0		V V		< 0.52	v 0.57	T	× 0.52	× 0.50	× 0.52	0.52
suryi berizyi primalate arbazole	T	┸	4	(a) .	Ţ	< 0.45	< 0.20	< 2.2	< 2.2				< 2.2		< 0.21	< 0.21	T	< 0.23				0.21
CHICAGODO	1 53F+02 (1)	3 23F+03	(4) 1.05	(8)	ľ	< 0.45	< 0.20	< 2.2			< 0.21		Ī		T	< 0.21	Ī	Ī	< 0.21	< 0.23	Ī	< 0.21
Di-n-butyl offthalate	Ť	L	Ľ	+	I	, v	< 0.51	555					Ī			1.52			ľ			0.52
in-octyl phthalate	T	L	╄	t	I	06:0 >	< 0.41	4.4	4.4.4	× 4.6	< 0.41	< 0.82	> 4.4 >	< 0.85		< 0.41	< 0.46	< 0.46	< 0.41	< 0.45	< 0.42	< 0.42
Dibenz(a.h)anthracene	1,53E-01 (1)	3.23E+00	(4) 3.44	3.44E+00 (8)	L	< 0.45	< 0.20	< 2.2							< 0.21	< 0.21						< 0.21
Dibenzofuran		L	_	+	L	< 0.45	< 0.20	< 2.2	< 2.2							< 0.21			< 0.21			< 0.21
iethyl phthalate	4.93E+04 (1)) 2.15E+05	(5) 5.51	5.51E+01 (8)	< 0.44	< 0.45	< 0.20	< 2.2		< 2.3			< 2.2			< 0.21	< 0.23	< 0.23				< 0.21
Dimethyl phthalate	П	``	(2) 9.08	9.06E+02 (8)	Ц	< 0.45	< 0.20	< 2.2								< 0.21						< 0.21
luoranthene	2.32E+03 (1)	1.00E+04	(5) 7.52	.52E+02 (8)	\Box	< 0.45	< 0.20	< 2.2							< 0.21	< 0.21						< 0.21
Fluorene	1	_	4	┪	\Box	< 0.45	< 0.20	< 2.2								< 0.21						0.35
Hexachlorobenzene	3.33E+00 (1)	_	4	+	× 0.44	< 0.45	< 0.20	< 2.2	Ì	< 2.3	< 0.21	< 0.41	< 2.2	< 0.42	< 0.21	< 0.21	< 0.23	< 0.23	Ī	< 0.23	< 0.21	< 0.21
-lexachlorobutadiene	T.	2.69E+02	(c) (d)	4.94E-02 (8)	1	× 0.45	0.20	2.2 >	Ì							0.21		Ī	Ì	Ī		0.21
Texaciliotocycopelitatielle Javachlomathana	3.70E±02 (1)	┸	┸	7.5ZE-01 (6)	Ţ	× 0.43	< 0.20	2.2 >	Ī				Ī			< 0.21						< 0.21
ndano(1.2 3-cd)nymana	1	ſ,	Į.	t.	× 0.44	< 0.45	0.00 >	< 2.2		×23	< 0.21	< 0.41	< 2.2	< 0.42	> 0.21	< 0.21	< 0.23	< 0.23	ľ	< 0.23	< 0.21	< 0.21
sophorone	Ī.	L	╀		L	v 1.1	< 0.51	< 5.5								< 0.52						< 0.52
-Nitrosodi-n-propylamine	t	L	╄	╁	I	< 0.45	< 0.20	< 2.2					V	0.42		< 0.21	Ī	Ī	< 0.21	L		< 0.21
-Nitrosodiphenylamine	7.94E-03 (1)	Ш	(4) 5.54	Н		< 0.45	< 0.20	< 2.2						v	Ė	< 0.21				< 0.23	< 0.21	< 0.21
Vaphthalene	4.97E+01 (1)	Ц	(5) 4.63	4.63E-02 (8)	İ	< 0.45	< 0.20	< 2.2		< 2.3			< 2.2	< 0.42		1.2	< 0.23	2.4	0.69		0.42	1.6
trobenzene	1	_	4	7	1	^ 	< 0.51	< 5.5								< 0.52		1				< 0.52
Pentachlorophenol	1	4	(4) 3.42	٠,	I	< 0.90	< 0.41	< 4.4		× 4.6			< 4.4	< 0.85		< 0.41	Ī		< 0.41		< 0.42	< 0.42
nenarithrene	†	4	4	+	< 0.44	< 0.45	< 0.20	3.2	Ī	5.4	< 0.21 0.21	< 0.41	3.2		< 0.21	0.28	< 0.23	< 0.23	0.57	< 0.23	0.39	0.7
henol	1	4	4	+		< 0.45	< 0.20	< 2.2	Ī			T	Ī	T	T	0.21	T	I	T	Ī		< 0.21
yrene	7 80E+03 (1)	7.53E+03	(5) 1.08	1.08E +02 (8)	× 0.44	× 0.45	< 0.20	< 2.2	× 2.2	× 2.3	< 0.21	< 0.41	× 2.2	< 0.42 < 1.1	× 0.21	< 0.21	< 0.23	< 0.23	< 0.21	< 0.23	× 0.21	< 0.21
fotal Petroleum Hydrocarhons - (FPA Method 8015B) mg/kg	1000	1	4	-		,	000	200			70:0	2	200			10:0	50.0		1]	20:0
Gasoline Range Organics (GRO)	-			-	< 3.2		14 < 3.4	< 16	< 3.5	< 36	< 4.9	3.9	810	88	41	140	< 3.2	3000	130	< 3.6	20	160
Diesel Range Organics (DRO)	1.00E+03 (11)	1) 3.80E+03	(11)			46 2	200 3	34 2800	3400	1300 <	< 10	7.1	2000	029	110	410	v 11	2300	420	× 11	360	099
Motor Oil Range Organics (MRO)	3.00E+03 (12)	5.00E+03	(12)			100	410 < 51	1900	2500	1100 <	< 51	120	780 < 5	> 230 >	< 53	< 52	< 57	> 570	< 52	< 55	< 52	< 52
No screening level or analytical result available	1	J																				
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)	ns and Remediation	(Dec. 2014)																				
EPA - Regional Screening Levels (April 2009)																						
(1) INVICED RESIDENTIAL SCREENING LEVEL (2) EPA Residential Screening Level																						
(4) Landscanding Screening Levels (April 2009) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007	tiplied by 10 pursuar	nt to Provision V	II.B. of the J	July 7, 2007																		
NMED Order because the constituent is listed as carcinogenic (4) NMED Industrial Occupational Screening Level	genic																					
(5) NMED Construction Worker Screening Level (6) FPA Industrial - Screening Levels (April 2009)																						
(7) EPA Industrial - Screening Levels (April 2009) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007	ied by 10 pursuant to	o Provision VII.E	: of the July	y 7, 2007																		
NMED Order because the constituent is listed as carcinogenic (8) SoilGW NMED Dilution Attenuation Factor (DAF) = 11.25	genic 1.25																					
(9) SoilGW Risk-based EPA DAF = 11.25	2																					
(10) SoilGW MCL-based EPA DAF = 11.25																						
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of	vn oil" with DAF = 1.	.0 - see report S	ection 5 for	nse of																		
screening levels																						

screening levels (12) NMED Table 6-2 TPH Soil Screening Levels "Waste Oil" with DAF = 1.0 - see report Section 5 for use of

screening levels
(13) arsenic screening level adjusted for site-specific

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(6.0-0) 8-81 UMWS	1409E14-001 9/26/2014		< 2.6	< 2.6	0.22	< 0.10	ΑΝ	7.5	3.5	AN.	2 4.9	< 2.6	3 22	1 42	0.083		< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	4 < 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	5 < 0.00355	< 0.00178	< 0.00888	< 0.00178	< 0.00355	< 0.00178	< 0.00178	< 0.00888	0.0130	< 0.00178	< 0.00178	< 0.00178	< 0.00266	< 0.00888	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	
('\$2-24')	1410359-005		< 2.6	< 2.6	< 0.16	< 0.11	NA	3.6	2.5	NA	.7	< 2.6	13	11	< 0.034		< 0.51	< 0.51	< 0.51	× 0.51	× 0.51	< 1.0	< 1.0	< 1.0	< 0.51	4	< 1.0	< 0.51	× 0.51	< 0.51	1.1	< 0.51	< 0.51	7.5	< 1.0	< 5.1	< 0.51	12	< 0.51	< 0.51	< 5.1	0.7.0	< 0.51	< 0.51	< 0.51	< 1.5	< 5.1	< 0.51	< 1.0	< 0.51	< 1.5	< 0.51	< 0.51	< 0.51	
('91-41) 7-81 UMWS	1410359-004		< 2.7	120	0.35	< 0.11	NA	4.4	3.2	NA	4.7	< 2.7	17	21	< 0.036		< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00294	< 0.00147	< 0.00735	< 0.00147	< 0.00294	< 0.00147	< 0.00147	< 0.00735	0.0515	< 0.00147	< 0.00147	< 0.00147	< 0.00220	< 0.00735	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	l
('4-2) 7-E1 UMWS	1410359-003		< 5.7	< 5.7	0.65	< 0.23	NA	8.4	6.5	NA	9.7	< 5.7	33	45	< 0.039		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.40	< 0.40	< 0.40	< 0.20	1.4	< 0.40	< 0.20	< 0.20	< 0.20	1.1	< 0.20	< 0.20	< 0.81	< 0.40	< 2.0	< 0.20	< 0.81	< 0.20	< 0.20	< 2.0	< 3.0	< 0.20	< 0.20	< 0.20	< 0.60	< 2.0	< 0.20	< 0.40	< 0.20	< 0.60	< 0.20	< 0.20	< 0.20	
('S-8.0) 7-E1 UMW8	1410359-002		< 5.5	4.5.5	89'0	< 0.22	NA	8.4	6.9	NA	9.1	< 5.5	31	42	< 0.037		< 0.21	< 0.21	< 0.21	17.0 >	< 0.21	< 0.43	< 0.43	< 0.43	< 0.21	1.8	< 0.43	< 0.21	< 0.21	< 0.21	1.7	< 0.21	< 0.21	< 0.86	< 0.43	< 2.1	< 0.21	< 0.86	< 0.21	< 0.21	< 2.1	< 3.2	< 0.21	< 0.21	< 0.21	< 0.64	< 2.1	< 0.21	< 0.43	< 0.21	< 0.64	< 0.21	< 0.21	< 0.21	
('8.0-0) 7-E1 UMW2	1410359-001		< 3.0	13	0.43	0.26	NA	33	4.9	NA	21	< 3.0	56	93	< 0.26		< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00340	< 0.00170	< 0.00850	< 0.00170	< 0.00340	< 0.00170	< 0.00170	< 0.00850	0.0243	< 0.00170	< 0.00170	< 0.00170	< 0.00255	< 0.00850	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	
SWMU 13-6(24-26')	1410212-003		< 2.6	< 2.5	< 0.15	< 0.10	NA NA	5.4	5.9 0.95	N/	3.9	< 2.6	18	17	< 0.034		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 1.0	< 1.0	< 0.50	< 0.50	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.7	< 1.0	< 5.0	< 0.50	4.2	< 0.50	< 0.50	< 5.0	< 7.5 < 0.50	< 0.50	< 0.50	< 0.50	< 1.5	< 5.0	< 0.50	< 1.0	< 0.50	< 1.5	< 0.50	< 0.50	< 0.50	
SWMU 13-6 (10-12')	1410212-002		< 2.9	3.8	0.58	< 0.12	NA NA	7.3	4.9	¥	7.6	< 2.9	24	31	< 0.035		< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00203	< 0.00209	< 0.0104	< 0.00209	< 0.00417	< 0.00209	< 0.00209	< 0.0104	0.0337	< 0.00209	< 0.00209	< 0.00209	< 0.00313	< 0.0104	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	< 0.00209	
('S-2.0) 9-E1 UMWS	1410212-001		< 2.9	27.0	0.55	0.43	NA	8.1	5.2	NA	10	< 2.9	30	54	< 0.036		< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00435	< 0.00217	0.0436	< 0.00217	< 0.00435	< 0.00217	< 0.00217	< 0.0109	0.00300	< 0.00217	< 0.00217	< 0.00217	< 0.00326	< 0.0109	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	
2 (54-56')	1409E43-007	1 F	< 2.5	< 2.5 360	> 0.30	< 0.10	NA	3.6	4.2	NA	3.2	< 2.5	20	17	< 0.033		< 0.50	< 0.50	< 0.50	0.50	× 0.50	< 1.0	1.0	< 1.0	< 0.50	18	< 1.0	< 0.50	0.00	< 0.50	4.4	< 0.50	< 0.50	35	< 1.0	< 5.0	< 0.50	57	< 0.50	0.55	< 5.0	6 7.0 7 0.50	< 0.50	< 0.50	< 0.50	< 1.5	< 5.0	< 0.50	< 1.0	< 0.50	< 1.5	< 0.50	< 0.50	< 0.50	
SWWN 13-5 (10-12')	1409E43-006 9/25/2014		< 3.0	3.9	0.66	< 0.12	NA	8.4	5.3	NA	8.4	< 3.0	27	34	< 0.036		< 0.21	< 0.21	< 0.21	0.021	× 0.21	< 0.41	< 0.41	< 0.41	< 0.21	5	< 0.41	< 0.21	> 0.2	< 0.21	2	< 0.21	< 0.21	1.7	< 0.41	< 2.1	< 0.21	3.5	< 0.21	< 0.21	< 2.1	1000	< 0.21	< 0.21	< 0.21	< 0.62	< 2.1	< 0.21	< 0.41	< 0.21	< 0.62	< 0.21	< 0.21	< 0.21	
(.5-5.0) 3-51 UMWS	1409643-005		< 2.9	4.2.9 DBD	0.45	< 0.11	NA	6.7	7.7	NA	6.2	< 2.9	28	29	< 0.037		< 0.00206	< 0.00206	< 0.00206	< 0.00206	< 0.00200	< 0.00206	< 0.00206	< 0.00206	< 0.00206	0.0267	< 0.00206	< 0.00206	< 0.00206	< 0.00206	0.00567	< 0.00206	< 0.00206	< 0.00412	< 0.00206	< 0.0103	< 0.00206	< 0.00412	< 0.00206	< 0.00206	< 0.0103	0.0414	< 0.00206	< 0.00206	< 0.00206	< 0.00309	< 0.0103	< 0.00206	< 0.00206	< 0.00206	< 0.00206	< 0.00206	< 0.00200	< 0.00206	
('2.0-0) 3-£1 UMWS	1409643-004		< 2.6	3.9	0.36	0.19	NA	7.6	4.1	NA	6.8	< 2.6	22	58	0.31		< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	0.0064	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00380	< 0.00190	< 0.00949	< 0.00190	< 0.00380	< 0.00190	< 0.00190	< 0.00949	0.0127	< 0.00190	< 0.00190	< 0.00190	< 0.00285	< 0.00949	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	< 0.00190	
SWMU 13-4 (24-26')	1409E43-003	1 [< 2.6	5.2.6	0.17	< 0.10	NA	35	4.8	NA	6.1	< 2.6	23	19	< 0.034		< 0.038	< 0.038	< 0.038	× 0.038	× 0.030	< 0.075	< 0.075	< 0.075	< 0.038	< 0.038	< 0.075	< 0.038	× 0.038	< 0.038	< 0.038	< 0.038	< 0.038	0.49	< 0.075	< 0.38	< 0.038	0.45	< 0.038	< 0.038	< 0.38	× 0.5/	< 0.038	< 0.038	< 0.038	< 0.11	× 0.38	< 0.038	< 0.075	< 0.038	< 0.11	< 0.038	< 0.038	< 0.038	
2MWN 13-4 (e-8.)	1409E43-002 9/25/2014		< 2.8	3.2	0.51	< 0.11	NA	9.9	5.1	NA	7	< 2.8	27	32	< 0.037		< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	< 0.095	< 0.095	< 0.095	< 0.047	0.071	< 0.095	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	< 0.19	< 0.095	< 0.47	< 0.047	< 0.19	< 0.047	0.063	< 0.47	S U.7 I	< 0.047	< 0.047	< 0.047	< 0.14	< 0.47	< 0.047	< 0.095	< 0.047	< 0.14	< 0.047	< 0.047	< 0.047	
('S-8.0) 4-E1 UMWS	1409E43-001		< 2.8	2.9	0.46	< 0.11	NA NA	7.7	6.8	N N	6.3	< 2.8	24	40	0.069		< 0.00216	< 0.00216	< 0.00216	< 0.00216 < 0.00216	< 0.00210	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00433	< 0.00216	< 0.0108	< 0.00216	< 0.00433	< 0.00216	< 0.00216	< 0.0108	< 0.0108	< 0.00216	< 0.00216	< 0.00216	< 0.00325	< 0.0108	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	
2MWN 13-3 (5e-58,)	1409C41-003		< 2.5	< 2.5	< 0.15	< 0.10	NA	2.5	3.8	NA	2.5	< 2.5	23	18	< 0.034		< 1.0	< 1.0	0.1.0	V 1.0	0.10	< 2.1	< 2.1	< 2.1	< 1.0	51	< 2.1	4.0	0.10	< 1.0	16	< 1.0	41.0	7.2	< 2.1	< 10	× 1.0	12	< 1.0	1.1	< 10	V 10	× 1.0	< 1.0	< 1.0	< 3.1	210	× 1.0	< 2.1	< 1.0	< 3.1	0.1.0	× 1.0	< 1.0	
2MWN 13-3 (4-6,)	1409C41-002 9/23/2014		< 2.7	170	0.4	< 0.11	NA	11	4.7	NA	11	< 2.7	23	28	< 0.039		< 1.5	< 1.5	5.1.5	0.17	21.5	< 3.1	< 3.1	< 3.1	< 1.5	200	< 3.1	5.1.5	0.1	× 1.5	67	< 1.5	4 1.5	< 6.2	< 3.1	< 15	< 1.5	10	< 1.5	< 1.5	< 15	6 6 7 3	< 1.5	< 1.5	< 1.5	< 4.6	< 15	× 1.5	< 3.1	< 1.5	< 4.6	× 1.5	× 1.5	< 1.5	
(S-8.0) 8-81 UMWS	1409c41-001 9/23/2014		< 2.7		0.37	< 0.11		5.4	3.7	NA	5.1	< 2.7	21	27	0.061		< 0.00188	< 0.00188	< 0.00188	0.00188	c 0.00188	< 0.00188	ı	ı	ıı	9	- 1	- 1	1	1	1 1	ı	< 0.00188	1	ll		< 0.00188		< 0.00188	H	< 0.00939	0.0105		1		< 0.00282				ı	- 1			< 0.00188	
Leachate DAF (11.25)			(8)	(13)	1.10E+02 (8)	(8)	5.45E-02 (8)			29E-05 (8)	(8)	5.75E+00 (8) 7.74E+00 (8)	(8)		3.68E-01 (8)	ì	(8)	(8)	2.70E-03 (8)	(8)	(0)		Ŀ	.93E-05 (8)	(8)	(6)	1.31E-05 (8)	(8)	9 (8)	02 (8)	(6)	Ľ	(6)	.69E-01 (9)	Ŀ	(8)	2.00E+00 (8)	1.01E+01 (9)	6	Ľ	(8)	(8)	1.69E-01 (9)	(8)	2.31E-01 (8)	(8)	8	0 6	(8)	(8)	.35E-02 (8)	(8)	(8)	1.02E+00 (9)	
Source			(2)	(4)	(2)	(2)	(4)	(2)	(6)	(5) 5.	(5) 2.	(5) 5.	(2)	(2)	(2)		(4)	(2)	€ (6) (3)	(2)	ŀ	L	2	(5) 9.9	Ц	(4) 1.3		(4) 4 58F=		(6) 2.2	·	(9)	(3)	-	(2)	(2)	(6) 1.0′	Ľ	·	(2)	(c) (c)	(9)	(4)	(7)	(2)	(2)	(2) (±)	(2)	(4)	(4)	(5)	(4)	(9)	
Non- Residential Soil Screening			1.42E+02	Z.15E+01	1.48E+02	7.21E+01	6.69E+01	1.34E+02	3.00E+02	3.54E-02	6.19E+03	1.75E+03	6.14E+02	1.06E+05	2.07E+01		1.37E+02	1.36E+04	3.94E+01	2.30E+00	4 24F+02			1.21E+00	7.91E+01	2.80E+02	1.18E+00	3.31E+00	4 07F+01	2.54E+01	2.00E+02		2.00E+04	9.90E+02		9.17E+04	7.08E+03	4.10E+03	7.20E+04		2.02E+04	2.42E+U5	4.10F+02	3.02E+01	3.25E+03	1.79E+01	1.62E+03	4.12E+02	1.66E+04	2.87E+01	2.01E+02	7.08E+02	6.74E+01	1.00E+04	
Source		Ιſ	Т	Т	+02 (1)	Т	+00 (1)	Т	Т	Т	T	+02 (1)	T	П	Т		(1)	(1)	£ 3	3 (3)	3		T	П	П	T	T	(1)	Т	T		Ш	+03 (2)	1	H	Ħ	+03	+02 (2)	Т	П	Т	+04	Τ	Г		П	T	+02 (1)	T	П	7	+02 (1)	Ť	П	
Residential Soll Screaning Local	3		3.13E	4.25	1.56E+02	7.05E	3.05E+00	9.6E	2.30E	6.16E-03	1.56E	3.918	3.94E	2.35E	2.38E+01	4	2.81E	1.44E	7.98E+00	7 080	4 40F			5.10E	8.29E+01	9.70E	8.58E-02	6.72E-01	8.32F+00	1.78E+01	4.70E+01		1.60E+03	2.20E		3.74E+04	1.56E	3.10E	5.50E+03		5.81E+03	0.03E+04	9 40F+01	6.19E	6.74E	1.77E+01	1.55	3.78	1.90E	5.90E	4.11E	1.56E+02	1.39	7.80E+02	
Annaldras	cortuit to	vkg)					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	nium		Lead						Volatile Organic Compounds - (EPA Method 8260) mg/kg	achloroethane	proethane	2-Tetrachloroethane	oroemane	ethene	1-Dichloropropene	robenzene	propropane	,4-Trichlorobenzene	2,4-Trimethylbenzene	Dibromo-3-chloropropane	pethane (EDB)	Dichloroethane (FDC)	Dropane	5-Trimethylbenzene	benzene	Dichloropropane	whithalene	propane	(MEK)	ene	yhthalene	lene	4-Isopropyltoluene	pentanone (methyl isobutyl ketone)		Jue Jue	omodichloromethane		ane	ulfide	an include	Chloroethane (ethyl chloride)		ane	lonovonana	lough openie	Dibromomethane	
		Metals (mg/kg)	Antimony	Arsenic	Beryllium	Cadmium	Chromium VI	Total Chron	Cobalt	Tetraethyl Lead	Nickel	Selenium	Vanadium	Zinc	Mercury	Volatile Or	1,1,1,2-Tetr.	1,1,1-Trichloroethane	1,1,2,2-Teth	1,1,2-I ncnk	1 1-Dichloro	1,1-Dichloro	1,2,3-Trichlk	1,2,3-Trichk	1,2,4-Trichk	1,2,4-Trime.	1,2-Dibrom	1,2-Dibrom	1,2-Dichloroethane (1,2-Dichloropropane	1,3,5-Trime	1,3-Dichlorobe	1,3-Dichlord	1-Methylnaphthalene	2,2-Dichloro	2-Butanone (MEK)	2-Chlorotolu	2-Methylnaphthalene	4-Chlorotoluene	4-Isopropylt	4-Methyl-2-	Acetone	Bromobenzene	Bromodichk	Bromoform	Bromomethane	Carbon disultide	Chloroberze	Chloroethan	Chloroform	Chloromethane	cis-1,2-DCt	Dibromochic	Dibromome.	

Table 6	Soil Analytical Results Summary	loomfield Refinery, Bloomfield, New Mexico
	Soil	omfield
		∺

(2.0-0) 8-£1 UMW2	1409E14-001	9/26/2014	0.00170	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00178	< 0.00176	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.82	< 0.61	0.4	0.10	< 0.51	< 0.41	< 0.41	< 1.0	< 0.41	< 0.41	< 0.41	< 0.51	4 0.4 4 10	< 0.41	< 1.0	< 1.0	< 0.41	< 0.82	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 1.0	< 0.41	< 0.41	< 0.41	V U.*1
(22-24')	1410359-005	10,6/2014	10.0	10	: 0.51	< 0.51	< 1.5	< 1.5	< 0.51	2.7	0.57	10.51	c 0.51	< 0.51	< 0.51	< 0.51	< 0.51	< 0.51	c 0.51	0.1	< 0.21	< 0.21	< 0.21	< 0.21	4.4	< 0.21	< 0.21	< 0.42	< 0.31	× 0.52	5 0.32	c 0.26	: 0.21	6.7	< 0.52	< 0.21	< 0.21	< 0.21	× 0.26	: 0.52	< 0.21	< 0.52	< 0.52	< 0.21	× 0.42	c 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	× 0.21	10.21	: 0.52	< 0.21	< 0.21	< 0.21	12.0
(,91-41) 7-E1 UMWS	1410359-004	10/6/2014	0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	< 0.00147	× 0.00147	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.45	< 0.34	0.00	0.30	< 0.28	< 0.23	< 0.23	< 0.56	< 0.23	< 0.23	< 0.23	87.0 2	0.65	< 0.23	< 0.56	< 0.56	< 0.23	< 0.45	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	5 0.23	< 0.56	< 0.23	< 0.23	< 0.23	0.20
('4-2) 7-E1 UMWS	1410359-003	10/6/2014	02.0	< 0.40	< 0.20	< 0.20	< 0.60	09:0>	< 0.20	< 0.40	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	Z:5	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.92	69.0 >	7.12	412	< 0.58	< 0.46	< 0.46	< 1.2	< 0.46	< 0.46	< 0.46	< 0.58	× 0.40	< 0.46	< 1.2	< 1.2	< 0.46	< 0.92	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 1.2	< 0.46	< 0.46	< 0.46	V-'0.
('S-8.0) 7-E1 UMWS	1410359-002	10/6/2014	720	< 0.43	< 0.21	< 0.21	< 0.64	< 0.64	< 0.21	< 0.43	× 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	0.0	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 4.5	43.4	7.0.7	7 2 7	×2.8	< 2.3	< 2.3	< 5.7	< 2.3	< 2.3	< 2.3	62.8	5.57	< 2.3	< 5.7	< 5.7	× 2.3	6.28	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	62.3	5.23	< 5.7	< 2.3	< 2.3	< 2.3	6.7
('2.0-0) 7-E1 UMW2	1410359-001	10/6/2014	0.00170	0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	0.00170	0.00170	0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	0.00170	0.00170	0.00100	:23	2.3	:2.3	× 2.3	£ 2.3	< 2.3	× 2.3	4.5	3.4	7.0.7	5.27	2.8	2.3	< 2.3	: 5.7	× 2.3	× 2.3	2.3	8.7.3	5.7	2.3	. 5.7	5.7	52.3	2.58	2.3	< 2.3	2.3	× 2.3	< 2.3	: 2.3	2.3	5.2.3	5.23	5.7	× 2.3	< 2.3	2.3	6.7
SWWN 13-6(24-26')	1410212-003	10/3/2014	0.00	100	< 0.50	< 0.50	1.5	< 1.5	< 0.50	41.0	0.50	0.50	0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.50	0.50	0.1	: 0.21	< 0.21	< 0.21	< 0.21	2.4	< 0.21	: 0.21	< 0.42	c 0.31	20.92	0.02	0.26	: 0.21	3.7	< 0.52	< 0.21	× 0.21	0.21	0.26	0.57	× 0.21	< 0.52	< 0.52	0.21	0.42	0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	c 0.21	12.0	0.21	< 0.52	< 0.21	< 0.21	5 0.21	17.0
SWMU 13-6 (10-12')	1410212-002	10/3/2014	0.00209	0.00203	0.00209	0.00209	0.00209	0.00209	0.00209	• 0.00209	0.00209	0.00209	0.00209	- 0.00209	0.00209	0.00209	0.00209	0.00209	0.00209	0.00209	: 0.23	: 0.23	: 0.23	< 0.23	: 0.23	: 0.23	: 0.23	0.46	0.35	0.06	0.30	× 0.29	: 0.23	: 0.23	: 0.58	: 0.23	< 0.23	0.23	67.0	0.58	0.23	: 0.58	0.58	0.23	0.46	: 0.23	: 0.23	: 0.23	: 0.23	: 0.23	: 0.23	0.23	0.23	0.23	. 0.58	: 0.23	: 0.23	0.23	0.20
('S-8.0) 8-81 UMWS	1410212-001	10/3/2014	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.00217	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.90	0.67			0.56	0.45	0.45	1.1	0.45	0.45	0.45	0.56	11	0.45	1.1	1.1	0.45	0.90	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	1.1	0.45	0.45	0.45	0.40
SWMU 13-5 (24-26')	409E43-007	9/25/2014	000	10	4.	> 0.50	1.5	3.9	> 6.9	200	N.3 c	0.50	0.50	2.6	0.50	> 0.50	> 0.50	0.50	09.0		< 0.21	> 0.21	> 0.21	0.21	> 61	0.21	0.21	0.42	0.31	0.52	0.52	0.26	0.21	37 <	0.52	0.21	0.21	0.21	0.26	0.52	0.21	0.52	0.52	0.21	0.42	0.21	0.21	> 12.0	0.21	0.21	0.21	0.21	0.27	0.21	0.52	0.21	> 0.21	0.21	0.21
SWMU 13-5 (10-12')	409E43-006	9/25/2014	0.2	0.41	0.21	> 0.21	> 0.62	0.62	-	1.1	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	4.0	0.23	0.23	0.23	0.23	1.4	0.23	0.23	0.46	0.34	0.57	0.57	0.29	0.23	2.5	> 2.0	0.23	0.23	0.23	0.29	0.57	0.23	> 2.0	> 220	0.23	0.46	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.57	0.23	0.23	0.23	0.20
('S-8.0) 8-81 UMWS	1409643-005	9/25/2014	0.0000	0.0000	> 0.00474	> 0.00206	> 0.00200	0.00271	0.014	0.00883	0.00206	0.00200	0.00200	> 0.00206	> 0.00206	0.00206	0.00206	0.00206	0.00206	0.029	< 0.22	. 0.22	> 0.22	0.22	0.22	0.22	0.22	0.44	0.33	0.00	0.33	< 0.27	0.22	0.22	> 0.55	0.22	< 0.22	0.22	0.27	0.22	0.22	> 0.55	0.55	0.22	0.44	0.22	0.22	> 0.22	> 0.22	. 0.22	0.22	0.22	0.22	27.0	0.55	> 0.22	> 0.22	0.22	0.22
('č.0-0)	1409e43-004	9/25/2014	0.0000	0.00000	0.00190	> 0.00190	> 0.00190	0.00190	< 0.00190	0.00190	0.00190	0.00190		> 0.00190	0.00190	> 0.00190	0.00190	0.00190	0.00190	0.0119	2.1	2.1	2.1	< 2.1	2.1	2.1	2.1	4.2	3.1	20.7	20.0	2.6		2.1	5.2	2.1	2.1	2.1	2.6	5.7	2.1	5.2	5.2	2.1	2.4.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	21	5.2	2.1	2.1	2.1	7.1
SWMU 13-4 (24-26')	1409E43-003	9/25/2014	0.000	0.075	0.038	> 0.038	: 0.11	: 0.11	0.059	0.075	0.038	0.038	0.038	0.038	. 0.038	0.038	: 0.038	0.038	0.038	0.32	< 0.21	. 0.21	: 0.21	< 0.21	> 0.57	: 0.21	: 0.21	0.45	0.32	0.53	0.33	0.26	: 0.21	0.38	: 0.53	: 0.21	: 0.21	0.21	0.26	0.53	0.21	: 0.53	: 0.53	0.21	0.42	0.21	: 0.21	: 0.21	: 0.21	: 0.21	0.21	0.21	0.27	0.21	: 0.53	: 0.21	0.21	0.21	0.21
(8-9) 4-E1 UMWS	1409E43-002	9/25/2014	1000	0.00	c 0.047	< 0.047	< 0.14	× 0.14	< 0.047	0.13	0.1	0.047	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	0.10	:22	: 2.2	:2.2	: 2.2	≥ 2.2	< 2.2	: 2.2	4.5	3.3	0.0	20.0	2.8	:2.2	< 2.2	. 5.6	₹2.2	× 2.2	2.2	8.7.9	2.7	2.2	2.6	5.6	5.22	2.58	2.2	< 2.2	: 2.2	< 2.2	< 2.2	: 2.2	< 2.2	7.7.7	2.7	2.6	< 2.2	< 2.2	2.2	7.7
('S-2'0) #-E1 UMWS	1409E43-001	9/25/2014	0.00210	0.00210	0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	c 0.00216	0.00216	0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	< 0.00216	0.00210	< 2.3	2.3	< 2.3	< 2.3	< 2.3	< 2.3	× 2.3	4.5	3.4	0.0	20.0	× 2.8	2.3	< 2.3	. 5.6	× 2.3	< 2.3	2.3	8.7.3	5.56	2.3	2.6	2.6	523	2.4.5	< 2.3	< 2.3	2.3	× 2.3	< 2.3	: 2.3	:2.3	5.2.3	5.23	2.6	× 2.3	< 2.3	2.3	6.7
(82-92) 8-81 NMWS	1409C41-003	9/23/2014	1.0	201	3	1.0	3.1	4.6	12	7.9	2.1	10	1.0	5.5	1.0	1.0	1.0	0.1	0.1	. 0/	: 0.22	: 0.22	: 0.22	: 0.22	5.6	: 0.22	: 0.22	: 0.43	0.32	60.0	0.04	: 0.27	: 0.22	10	: 0.54	: 0.22	: 0.22	0.22	0.27	0.54	0.22	: 0.54	0.54	0.22	0.43	: 0.22	: 0.22	: 0.22	: 0.22	: 0.22	: 0.22	: 0.22	22.0	27.0	0.54	: 0.22	: 0.22	0.22	7.7.0 ·
(4-6')	1409C41-002	9v23v2014	6	431	3.4	< 1.5	< 4.6	12	25	11	3.8	v v	< 1.5	45	c 1.5	< 1.5	< 1.5	5.1.5	4.1.5	067	< 0.45	< 0.45	< 0.45	< 0.45	5.7	< 0.45	< 0.45	< 0.91	89.0 >			< 0.57	< 0.45	9.6	1.1	< 0.45	< 0.45	0.45	5 0.57	111	< 0.45	1.1	× 1.1	0.45	0.97	0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	0.45	< 0.45	1.1	< 0.45	< 0.45	< 0.45	0.40
(S-2.0) E-E1 UMWS	1 – 1	9/23/2014		Т	Т	Г	< 0.00188	< 0.00188	< 0.00188	< 0.00188	< 0.00188	Τ.	Т	33	П	П	< 0.00188	< 0.00188	< 0.00188	0.0094								< 0.87				0.54	: 0.44	: 0.44	1.1				0.54 0.54		< 0.44			< 0.44										< 0.44				× 0.44	
Leachate DAF (11.25) CC (mg/kg) Ø		00.	0 6	(0)	6.40E+00 (8)	(8)	(8)		-			(o)	(8)	(8)	(8)	(8)	9.84E-03 (8)	8	7.59E-04 (8)	(8	9.92E-02 (8)	(8)	٠	(8)	(6)	(8)	(8)	(8)	(8)	(8)	5.74E-03 (a)	9	(8)	(6)	(6)	3.71E-01 (9)		2.14E+00 (9) <	(8)	2 22E_02 (8)	(0)		1.35E-03 (9)	. 9	0.5	4.64E+01 (8)	•	(6)	(8)	5.74E-03 (9)	(8)	(8)	(8)	. 6	6)	(6)	2.59E-01 (9)	(e)	8
Source		14/	2 8	(9)	(2)	4	(2)	-		(5) 4.6	. (4)		(2)	(2)	(2)	(2)	(2)	(2)			(2)	(2)		(4)	(7)	(2)	(2)	(2)	(2)	(c)	Ē Ē	(2)	(2)	(9)	(9)	(6) 3.7	٠	(9)	(4)	(6) 29		ш	(7) 1.35			+	_		(5) 4.79	(7) 5.74	€	€ 3	4)	· (4)	(9)	(9)	(9)	(2)	_
Non- Residential Soil Screening Level		4 047	2001-102	2.00E-102	2.74E+03	4.82E+03	1.21E+03			1.59E+02		- VZETU4	1.20E+02	1.40E+04	3.05E+02	1.30E+02	6.90E+00	1.13E+03	2.84E+01	7.98E+02	7.91E+01	2,50E+03			9.90E+02	- 1	- 1	8.07E+02	- 1		1 725±01	2.83F+04	1.77E+03	4.10E+03	3.10E+04	1.80E+03		3.10E+03	5.70E+01	2 15F+01	. IO. I		8.60E+01	- 100 0	8.60E+02	1.51E+04		3.00E+03	7.53E+04	2.20E+02	3.23E+01	3.23E+00	3.23E+01	3 23⊑∓03	2.50E+06	3.10E+05	1.80E+03	1.95E+00	3.19ETV2
Source		190	(1)	(1)	3	(1)	(1)	_	T	.+01	. (9)	Ť	t	T	П	П	.+00	1	7	1	.+01	T		П	П	T	T	.+02	T	Τ	Τ	t	Т	t	:+03 (2)	П	П	.+02 (2)	Ť	.+00	T	T	:+00 (3)	. 0	T	.+03	T	Г	П	(3)	T	T	T	. (1)	T	П	:+02 (2)	T	
Residential Soil Screening Level		100 1	7 54	1.0.1 HAT A	2.36F	9.75E	4.09E+02			4.97E+01	- 100	102.1	1,11	5.23E	2.95E	2.93E	6.77E+00	1.23E	7.42E	9.71	8 29	2.15E+03		3.28E	2.20E	6.16E	6.16E	1.85E	1.23E	1.23	3 565+00	6.26F	3.91	3.10E	3.10E+03	1.80E		3.10E+02	1.18	4 93F+00	100:1		2.40E+00	, L	2.40E	3.48E+03		8.50E+01	1.74E	4.90E+00	1.53E	1.53E	1.53	1 53	2.40E	3.10E	1.80E+02	3.11E+00	3,00
Analytes		110	dinologietiale	populadiene	(henzene (cimene)	art-butyl ether (MTBE)	Methylene chloride	enzene	n-Propylbenzene	ilene	sec-Butylbenzene	Styrene lert-Butylhenzene	etrachloroethene (PCE)		2-DCE	3-Dichloropropene	Trichloroethene (TCE)	ofluoromethane	chloride	Sylenes, Total	Trichlorobenzene	2-Dichlorobenzene	lorobenzene	,4-Dichlorobenzene	1-Methylnaphthalene	4,5-Trichlorophenol	2,4,6-Trichlorophenol	vorophenol	ethylphenol	r,4-Unimophenol	Totoluene	2-Chloronaphthalene	phenol	Methylnaphthalene	Methylphenol	niline	henol	+4-Methylphenol	nlorobenzidine	-Nitroarmine 6-Dinitro-2-methylphenol	phenyl phenyl ether	oro-3-methylphenol	aniline	aphenyl phenyl ether	nline	uthene	nthylene		sne	zene	anthracene	izo(a)pyrene	yhuoranthene	Benzo(g,n,i)perylene	acid	licohol	Bis(2-chloroethoxy)methane	Bis (2-chloroethyl)ether	iloroisopropy, jeu rei
		1	Diction of	Hevachlombii	Sopropy	Methyl te	Methylen	n-Butylbe	n-Propyli	Naphtha.	sec-Buty	tert-Birtyl	Tetrachic	Toluene	trans-1,2	trans-1,3	Trichloro	Trichlore	Vinyl chlo	Comi Vo	1.2.4-Tric	1.2-Dichk	1,3-Dichi	1,4-Dichi	1-Methyl.	2,4,5-Tri	2,4,6-Tri	2,4-Dich.	2,4-Dime	2,4-DINIC	2.4-DIIII	2-Chlorol	2-Chloro	2-Methyli	2-Methyl,	2-Nitroaniline	2-Nitrophenol	3+4-Met.	3,3 -Dici	4 6-Dinitr	4-Bromo	4-Chloro	4-Chloroaniline	4-Chloro	4-Nitrophenol	Acenaph	Acenaphthylene	Aniline	Anthracene	Azobenzene	Benz(a)s	Benzo(a	Benzo(b	Benzo(b)	Benzoic :	Benzyl a.	Bis(2-chi	Bis(2-cn	DIS(2711

Table 6 Soil Analytical Results Summary Bloomfield Refinery, Bloomfield, New Mexico

CL (TINMAS) 1) 1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1						(S-5.0) E-6	3-3 (4-6')	-3 (26-28')	(.Z- <u>G</u> .0) 4-	3-4 (6-8')	-4 (24-26')	(,9-0-0) 9-	('\s-2.0) ह-	-5 (10-12')	-2 (24-26')	('S-2.0) 9-	-e (10-12')	-6(24-26')	('č.0-0) T-	('S-8.0) T-	3-7 (2-4)	(,91-71) /-	('42-22) 7-	(3.0-0) 8-6
March Marc						Source		EI NMWS	EI UMWS	INWMS	EI UMWS	EI NWWS	SYMN 13	EI UMWS	EI UMWS	EI NWWS	EI UMWS	SYMU 13	SI NWWS		I NWWS	EI UMWS	EL UMWS	SYMU
Color Colo						1409c41	_	-	-	1409E43-002 9/25/2014	1409E43-003 9/25/2014	-	-	13-006	—	-	-	-	\vdash	-	-	-	-	39E14-001
Colonida Colonida	is(2-ethylhexyl)phthalate	Г	L	П	ш	(8) < 1.1	× 1.1	< 0.54	< 5.6		П	v		v				Ė			Ė	Ė	٧	.0
Coloniary Colo	utyl benzyl phthalate	П	Ц	П		(9) < 0.44	< 0.45	< 0.22	< 2.3												v		Ì	.41
Colorado Colorado	arbazole		1			- < 0.44	< 0.45	< 0.22	< 2.3	< 2.2				0.23 <	0.21 <		Ì	,	~		·	,		.41
Column C	nysene	┪	4	T		(8) < 0.44	< 0.45	< 0.22	< 2.3									v	~		Ť	Ì	·	.41
Column C	-n-butyl phthalate	┪	4	7	_		v 1.1	< 0.54	< 5.6					V			Ì				V	V	v	0.
Column C	-n-octyl phthalate			T		- < 0.87	< 0.91	< 0.43	< 4.5	< 4.5				v		1	Ì	Ì			V	V	v .	.82
Colorado Colorado	benz(a,h)anthracene	1.53E-01 (1) 3.23E-	T		(8) < 0.44	< 0.45	< 0.22	< 2.3								Ì	Ì			Ì	Ì	Ì	41
Color Colo	penzofuran	7		7			< 0.45	< 0.22	< 2.3								Ì				Ì		Ì	.41
Color Colo	ethyl phthalate	7		7			< 0.45	< 0.22	< 2.3								Ì				Ì			.41
Color Colo	methyl phthalate	1	4	7			< 0.45	< 0.22	< 2.3	< 2.2			v	T		Ť	•	Ì		Ī	Ť	Ì		.41
Color Colo	Joranthene	†	4	†	_	(8) < 0.44	< 0.45	< 0.22	< 2.3	2.2 >			Ť	0	3	Ì	v				Ì	v	000	14.1
Column C	Jorene	†	4	Ť		(8) < 0.44	< 0.45	000,	37 < 2.3	Ī				0.25	0.41		Ī	0.39	Ĭ		Ī	1	0.93	14.1
Colorado Colorado	sxachlorobenzere	Ť	Ţ	1	4	(8) < 0.44	A 0.45	× 0.22	× 2.3	Ī			T	T		T			Ī		1		Ì	14.1
Colorado Colorado	xacriloroughamatalian	9 705+01	1) 2.09E	t	4	(6) > 0.44	V 0.45	7 0 22	6.67	7.5.7	Ī		T		I	T	Ť	Ī	Ī		T	T	Ī	44
Color Colo	xacilonethane	T	╀	t	┸	(8) < 0.44	× 0.45	< 0.22	< 2.3	< 2.2			T	Ť	T		Ť	Ť			Ť	Ť	ĺ	4.1
Column Color Col	eno(12.3-cd)pyrene	Ī	Ļ	T	┸	(8)	< 0.45	< 0.22	< 2.3				Ī	T			ľ	Ť			ľ	ľ		41
Column C	photone	Ť	ļ	t	┸	(8)	v 1.1	× 0.54	55.6		Ī.	2		ĺ			Ť	Ť			ľ	Ť	Ĺ	0
Code Code <th< td=""><td>ċ</td><td>t</td><td>L</td><td>t</td><td></td><td></td><td>< 0.45</td><td>< 0.22</td><td>< 2.3</td><td>< 2.2</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Ť</td><td></td><td>3 <2.3</td><td></td><td>ľ</td><td>Ĺ</td><td>ĺ</td><td>.41</td></th<>	ċ	t	L	t			< 0.45	< 0.22	< 2.3	< 2.2							Ť		3 <2.3		ľ	Ĺ	ĺ	.41
Color Colo	Vitrosodiphenylamine	7.94E-03	1) 1.71E-	t	ᆫ	(8) < 0.44	< 0.45	< 0.22	< 2.3	< 2.2		1			1		Ė		3 < 2.3			Ė	Ė	.41
	ohthalene	Ė	Ĺ		┖	(8) < 0.44		10	5 < 2.3					0.7	7.8			0.66	_		V		1.9	.41
Color Colo	obenzene	6.04E+01	1) 2.93E-		_		v 1.1	< 0.54	< 5.6	< 5.6							Ì				•			0.
Column C	tachlorophenol	1	4	1	4		< 0.91	- 1	< 4.5	Ī							Ì					Ì		.82
Column C	enanthrene	1	_		_	(8) < 0.44	< 0.45	- 1	69 < 2.3	Ī		1	1	0.28	0.57		Ì	1.1				Ī	2.1	41
Court Cour	lon	1	_	1	4	(8) < 0.44	< 0.45	< 0.22	< 2.3	Ī			1				Ì				Ĭ	Ì		.41
C 220 C 500 C 500 <th< td=""><td>ene</td><td>T</td><td>4</td><td>T</td><td>4</td><td>(8) < 0.44</td><td>< 0.45</td><td>< 0.22</td><td>< 2.3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Ì</td><td>Ì</td><td></td><td></td><td>V !</td><td></td><td></td><td>141</td></th<>	ene	T	4	T	4	(8) < 0.44	< 0.45	< 0.22	< 2.3								Ì	Ì			V !			141
C 3 2 1800 550 < 3.8 410 1300 530 710 < 55 5.1 < 3.7 720 71 720 71 720 71 720 71 720 71 720	oline al Petroleum Hydrocarbone - (FPA Method 8015B) male	/.00E+01]	3	1	(9)		\$5.0	0.0.0	0.6		,			70.0	7			0.0			٦		0.
200 410 1300 530 734 110 4500 70 110 677 610 6100 6100 4500 650 110 670 610 6100 4500 650 70 610 6100 6100 650	soline Range Organics (GRO)		L	F	-	< 3.2	17		20 < 3.8	47	45	< 4.1	3.9	16	390	5.1 < 3	3.7	29	7	620	310 < 3.6		85 < 3.	4
400 < 56	sel Range Organics (DRO)	Ť								0,	320	74	1	1100	4500	70 < 1	1	940	180	12000	5900 < 11		3700	26
		T		T			7007	ı		4000	5	7	20	,		1			oc.	0400	7	,		00
WED - Risk statement Guidance for Site Investigations and Remediation (Dec. 2014) Where Residual Servering Levels (April 2008) Where Residual Servering Levels (April 2008) For Residual Servering Levels (April 2008) White District Servering Levels (April 2008) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 For Post Residual Secreting Levels For Residual Servering Levels For Residual Secreting Levels For Residual Secreting Levels For Residual Secreting Levels For Residual Secreting Levels MINED Conduction Overpational Servering Levels For Interesting Levels MINED Conduction Overpational Servering Levels For A Interesting Levels For Residual Secreting Levels For Residual S	otor Oil Range Organics (MRO) As screening level or analytical result available	٦	╝	1			400 < 20	010	4	1300	207	/	00	/	070	101		70	300	0100	4200 < 20	_		90
NAMED Residential Screening Level The Residential Screening Level The Residential Screening Level The Residential Screening Level The Residential Screening Level The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level and Screening Level The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residential Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residual Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residual Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residual Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 The Residual Screening Level (April 2009) multiplied by 10 pursuant to July 7, 2007 The Residual Screening Level (April 2009) multiplied by 10 pursuant to	MED - Risk Assessment Guidance for Site Investigation A - Regional Screening Levels (April 2009)	is and Remediation	n (Dec. 201	(
F PRA reductal as Secreting Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 MED dots because the constituent are facilities and secreting Level MED dots because the constituent are secreting Level F PRA industrial - Screening Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 F PA dividities of the Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 F PA dividities are carefunded to the State and Constituent of the Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 F PA dividities are carefunded to the State of the Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 F PA dividities are carefunded to the State of the Level (April 2009) multiplied by 10 pursuant to Provision VII B. of the July 7, 2007 F PA dividities are carefunded to the State of the St	NMED Residential Screening Level																							
TERY rebeating a Section in the state of the	FPA Residential Screening Level	Charles of the contract of the	in property of	0 11/1	Fisher Line	2002																		
EPA Industrial - Screening Levels (April 2009) EPA Industrial - Screening Levels (April 2009) EPA Industrial - Screening Levels (April 2009) EPA Industrial - Screening Levels (April 2009) EPA Industrial - Screening Levels (April 2009) Solicy Mach Levels - Screening Levels (April 2004) Solicy Mich. Despect EPA DAF = 11.25 Solicy Mich. Despect EPA DAF = 11.25 Solicy Mich. Despect EPA Industrial Evels Solicy Control of the Unit DAF = 1.0 - See report Section 5 for use of	EPA Residential - Screening Levels (April 2009) mut. MED Order because the constituent is listed as carcino, NMED Industrial Occupational Screening Level MMED Construction Worker Screening I avel	iplied by 10 pursu. genic	ant to Provis	ion VII.B. (of the July 7,	2007																		
PEC Neutralisa - Stevening Levels (April 2009) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007 WED To Neutralisative Stevening Levels (April 2009) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007 Solicy Wile Neutralisative Teach (DAP) = 11.25 Solicy Wile Absented Factor April 2007 Solicy Wile Absented Factor Absented Factor Absented Factor April 2007 Solicy Wile Absented Factor Absented	FPA Industrial - Screening Levels (April 2009)																							
Section When Database a section of the section of t	EPA Industrial - Screening Levels (April 2009) multipli	ed by 10 pursuant	to Provision	، VII.B. of t	he July 7, 20	200																		
Solidy Witsbased EPA DAF = 11.25) Solidy Witch Dased EPA DAF = 11.25 I) NIME Table 6-2 TP H Solids Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of	MED Order because the consument is listed as calcing) SoilGW NMED Dilution Attenuation Factor (DAF) = 11	Jenic .25																						
) SoliGW M.CL-based EPA DAF = 11.25 NIMED Table 6.2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of	SoilGW Risk-based EPA DAF = 11.25																							
) NIMED Table 6.2 TPP HIS OS Greening Levels "uknown oil" with DAF = 1.0 - see repart Section 5 for use of)) SoilGW MCL-based EPA DAF = 11.25																							
	1) NMED Table 6-2 TPH Soil Screening Levels "uknov	n oil" with DAF =	1.0 - see гер	out Section	n 5 for use c	=																		

screening levels (12) NMED Table 6-2 TPH Soil Screening Levels "Waste Oil" with DAF = 1.0 - see report Section 5 for use of

screening levels
(13) arsenic screening level adjusted for site-specific

Table 6 Soil Analytical Results Summary Bloomfield Refinery, Bloomfield, New Mexico	
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('S-2.0) 41-51 UMWS 13-14-001	2.9 4 180 0.5	0.12 IA 10	13 A 9.3	2.9 0.29 25	43 0.1	0.039	0.039	0.039	0.079	0.079	0.039	0.079	0.039	0.039	0.039	0.039	0.079	0.39	0.39	0.039	0.39	0.095	0.039	0.039	0.12	0.039	0.039	0.079	0.12	0.039	0.039
1410523-004 10772014	2.6 150	0.10 AA 3.1	1.7 A 2.8	0.26	0.034	> 0.071	0.071	0.071	0.07	0.14	0.071	0.14	0.071	> 0.071	0.071	0.071	0.14	> 0.71	> 0.71	0.071	0.71	0.071	0.071	> 0.071	> 0.21	1,000	> 12003	0.14	0.21	0.071	0.071
1410523-004 10772714 10772714	2.8 97 0.33	NA 4.3	3.1 4.2	0.28	0.036	0.032	0.032	0.032	0.032	0.065	0.032	0.065	0.032	0.032	0.032	0.032	0.065	0.32	0.32	0.032	0.32	0.032	0.032	0.032	. 0.097	0.032	0.032	0.065	0.097	0.032	0.032
('S-3.0) E1-E1 UMWS 141623.004	220 220 0.51	11 N N N N N N N N N N N N N N N N N N	7.4 AI	0.28	0.13	> 0.00191	0.00191	0.00191	0.00191	0.00191	0.00191	0.00191	0.00191	0.00191	0.00191	0.00191	0.00382	0.00956	0.00382	0.00191	0.00956	0.00191	0.00191	> 0.00191	0.00287	0.00191	> 0.00191	0.00191	0.00191	0.00191 ×	0.00191
1410523-004 13-13 (0-0.5°)	3.2 200 200 0.45	AN 0.111	4A 8.2	2.7	90 5.8 5.0	0.00207	0.00207	0.00207	0.00207	0.00207	0.00207	0.00207	0.00207	> 0.00207	0.00207	0.00207	0.00207	0.0103	0.0103	0.00207	0.0103	0.00207	< 0.00207	0.00207	< 0.00310	0.00207	0.00207	0.00207	0.00207	: 0.00207	0.00207
1410213-004 (24-26')	2.5 160	2.0	4A 1.2	0.25	0.033	.0.48	0.48	0.48	0.97	0.97	1.1	0.97	0.48	0.48	0.48	0.48	> 2.8	4.8	3.5	0.48	4.8	0.48	0.48	. 0.48	1.4	0.48	0.48	0.97	1.4	: 0.48	0.48
1410213-003 102/23-003	3.2 250	22.0	2.7 5.2	c 0.28	22 < 0.035 < 0.25	× 0.00184	0.00184	0.00184	0.00184	0.00184	c 0.00184	< 0.00184	0.00184	< 0.00184 ×	0.00184	0.00184	< 0.00368	< 0.00919	< 0.00919	0.00184	0.00919	0.00184	0.00184	< 0.00184	< 0.00276	0.00184	< 0.00184	< 0.00184	0.00184	< 0.00184 ×	0.00184
('S-8.0) S1-E1 UMWS 13-02 (0.5-2')	130	2.0	4.7	2.7 c .0.27 c	0.15	: 0.00186	0.00186	0.00186	0.00186	0.00186	0.00186	0.00186	0.00186	0.00186	0.00186	0.00186	0.00186	0.00932	0.00932	0.00186	0.00932	0.00186	0.00186	: 0.00186	0.00280	0.00186	: 0.00186	0.00186	0.00186	: 0.00186	0.00186
('6.0-0) S1-E1 UMWS 13-00 ('6.0-0.5')	2.9 200 0.29	2.0	4A 4.7	0.27	0.28	: 0.00193	0.00193	0.00193	0.00193	0.00193	0.00193	0.00193	0.00193	0.00193	0.00193	0.00193	0.00386	0.00965	0.00386	0.00193	0.00965	0.00193	0.00193	0.00193	0.00289	0.00193	: 0.00193	0.00193	0.00193	: 0.00193	0.00193
1410215-003 1002014	22.7 220 220 220	VA 14	4A 1.3	< 2.7 < 0.27 < 26	21 c 0.034 c 0.24	< 2.5	2.5	2.5	5.0	5.0	2.5	5.0	2.5	2.5	2.5	2.5	5.0	< 25	< 25	2.5	25	2.5	2.5	< 2.5	7.5	2.5	< 2.5	5.0	7.5	2.5	2.5
147 (0.5-2°) 11-81 (0.5-2°) (0.5-2°) (0.5-2°) (0.5-2°)	230 230 0.52	NA 15	7.3 7.4	< 2.8 < 0.28 < 27	0.11	0.080	0.080	0.080	0.000	< 0.16	c 0.080	< 0.16	< 0.080	< 0.080	0.080	0.080	< 0.32	0.080	< 0.80	< 0.080	< 0.80	0.080	< 0.080	< 0.080	< 0.24	080.0	< 0.080	< 0.16	< 0.24	080.0 >	0.080
(14102-0) 11-E1 UMWV 13-11 (0-0.5')	< 2.5 < 2.5 160 0.24	< 0.10 NA 4.8	NA 5.1	< 2.5 < 0.25 22	46 1.4 < 0.24	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00315	< 0.00787	< 0.00787	< 0.00157	< 0.00787	< 0.00157	< 0.00157	< 0.00157	< 0.00236	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157
1409B7-5-004 9/19/2014 9/19/2014	< 2.5 < 2.5 200 0.16	< 0.10 NA 5.2 3.4	NA 2.6	< 2.5 < 0.25	45.0.035 < 0.24	< 0.49	< 0.49	< 0.49	× 0.98	< 0.98	< 0.49	< 0.98	< 0.49	< 0.49	< 0.49	< 0.49	3.1 < 0.98	< 4.9	< 4.9 5.6	< 0.49	× 4.9	< 0.49	< 0.49	< 0.49	< 1.5	< 0.49	< 0.49	< 0.98	< 1.5	< 0.49	< 0.49
1409B75-003 94/1902714	< 2.5 < 2.5 200 < 0.15	< 0.10 NA 5	1.4 NA 3.5	< 2.5 < 0.25 24	4 0.032 < 0.24	< 0.35	< 0.35	< 0.35	< 0.70	< 0.70	< 0.35	< 0.70	< 0.35	< 0.35	< 0.35	< 0.35	< 0.70	< 3.5	< 3.5	< 0.35	< 3.5	< 0.35	< 0.35	< 0.35	< 1.0	< 0.35	< 0.35	< 0.35	< 1.0	< 0.35	< 0.35
140907 5-00.25-2°)	< 2.8 2.8 160 0.51	< 0.11 NA 6.8 4.8	5.5 NA 8.4	< 2.8 < 0.28 22	32 < 0.035 < 0.25	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177 < 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	0.0135	< 0.00355	< 0.00177	< 0.00887	0.0512 < 0.00177	< 0.00177	< 0.00177	< 0.00266	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177
(409B75-00) 01-E1 UMW8	< 2.6 4.3 210 0.42	0.23 NA 19	NA 8.9	< 2.6 < 0.26 31	160 0.62 0.25	<0.00176	<0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00352	< 0.00880 < 0.00176	< 0.00880	< 0.00176	< 0.00880	0.00311	< 0.00176	< 0.00176	< 0.00264	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176
1409E 14-004	< 2.7 < 2.7 140 0.18	< 0.11 NA 12 3.2	4.3 NA 5.3	< 2.7 < 0.27 17	4 0.035 < 0.25	< 0.50	< 0.50	< 0.50	60.0 >	< 0.99	< 0.50	< 0.99	< 0.50	< 0.50	< 0.50	< 0.50	cn 96:0 >	< 5.0	< 5.0	< 0.50	< 5.0	6.7.5 77.0	< 0.50	< 0.50	< 1.5	< 0.50	< 0.50	66:0 >	< 1.5	< 0.50	< 0.50
1409E 14-003 9078/2014	< 2.5 < 2.5 < 0.15	< 0.10 NA 3.3	2.8 NA 1.8	< 2.5 < 0.25 13	4 0.034 < 0.22	< 0.20	< 0.20	< 0.20	< 0.41	< 0.41	< 0.20 < 0.20	< 0.41	< 0.20	< 0.20	< 0.20	< 0.20	< 0.41	< 2.0	< 2.0	< 0.20	< 2.0	< 0.20	< 0.20	< 0.20	< 0.61	< 0.20	< 0.20	< 0.41	< 0.61	< 0.20	< 0.20
1409E1 -0.05 8 (0.5-2") 9786714	(13) < 2.8 (13) 3.4 (8) 210 (8) 0.58	< 0.11 NA 8	NA 5.	< 2.8 < 0.28 29	0.0	< 0.041	< 0.041	(8) < 0.041	× 0.081	< 0.081	< 0.041	< 0.081	< 0.041	< 0.041	v 0.04	< 0.041	< 0.081	< 0.41	< 0.41	× 0.041	< 0.41	0.041	< 0.041	< 0.041	< 0.12	< 0.041	< 0.041	< 0.081	< 0.12	< 0.041	< 0.041 < 0.041
Leachate DAF (11.25) CC (mg/kg) SoilGW	3.69E+00 (8) 3.20E+00 (13) 1.52E+03 (8) 1.10E+02 (8)	5.28E+00 (8) 5.45E-02 (8) 1.13E+05 (8) 5.51E+00 (9)	5.29E-05 (8) 2.73E+02 (8)	5.75E+00 (8) 7.74E+00 (8) 7.10E+02 (8)	17E+03 (8) 68E-01 (8) 94E-03 (8)	1		7.64E-02 (8)				31E-05 (8) 98E-04 (8)	2.57E+00 (8) 4.58E-03 (8)		. 6	(8)	(6)	1.13E+01 (8) 2.00E+00 (8)	. (6)	3.15E+01 (9)	2.70E+00 (8)	(8)	3.49E-01 (9)	2.31E-01 (8)	1.93E-02 (8)	87E-02 (8)	70E-01 (8)	34E+01 (8)	35E-02 (8)	03E-01 (8) 57E-02 (8)	4.24E-03 (8) 1.02E+00 (9)
Source	(5) (4) (5)	(6) (5) (6)	(5) (4) (5)	(2)	(2) (2)	(4)	(4)	£ £	2	(4)	(9)	<u>4</u> 4	(5)	(2)	. (9)	£ £	(7)	(5)	- (9)	(9)	(2)	(6)	(6)	6	(5)	(5) (4)	(2)	(5) (4)	(4)	(2)	(4)
Non- Residential Soil Screening Level	1.42E+02 2.15E+01 4.35E+03 1.48E+02							3.83E+02					2.50E+03 4.07E+01	—	-	1.59E		9.17E+04 7.08E+03	ш	7.20E+04	2.02E+04	ш	4.10E+02	ш			1 1		1 1	7.08E+02	ш
Residential Soil Screening Level	3.13E+01 (1) 4.25E+00 (1) 1.56E+04 (1) 1.56E+02 (1)	ПП		3.91E+02 (1) 3.91E+02 (1) 3.94E+02 (1)	тп	11E+01 (1)	\top	7.86E+01 (1)	TT	П	9E+01 (1)	T	2.15E+03 (1) 8.32E+00 (1)	1.78E+01 (1) 4.70F+01 (2)	Ħ	3.28E+01 (1)	Т	3.74E+04 (1) 1.56E+03 (1)	П	5.50E+03 (2)	.81E+03 (1)	1.78E+04 (1)	9E+01 (2)	T	1.77E+01 (1)	Т	П	0E+04 (1)	П	1.56E+02 (1) 2.93E+01 (1)	Ħ
Resid	24 11	30.00	9. 6. 4.	3.5	-	₋₩	+	7.8	ř	.5.	6.7	80 9	2.2	1.1		8	2.5	3.7	è	5.6	5.8	1.7	7.0	6.7	1.1	. 7.	3.7	25.5	4	7.5	7.8
Aralytes	(6)	щ	pea			Volatile Organic Compounds - (EPA Method 8260) mg/kg	oethane chloroethane	I nchloroethane chloroethane	ropene copenana	opropane	,4-Trichlorobenzene ,4-Trimethylbenzene	3-chloropropane thane (EDB)	enzene thane (EDC)	ichloropropane	enzene	enzene	thalene ropane	MEK) ne	thalene	ne	ntanone (methyl isobutyl ketone)		ne omethane		16	horide	16	(ethyl chloride)	le .	MANAGER	omethane ane
	Metals (mg/kg) Antimony Arsenic Barium Beryllium	Chromium Chromium VI Total Chromium	Lead Tetraethyl Lead	Selenium Silver Vanadium	Zinc Mercury Cyanide	Volatile Org	1,1,1-Trichlo, 1,1,2,2-Tetra	1,1,2-I nchloroetha 1,1-Dichloroethane	1,1-Dichloropropene	1,2,3-Trichlor	1,2,4-Trichlor 1,2,4-Trimeth	1,2-Dibromo-	1,2-Dichlorobenzene 1,2-Dichloroethane (EDC)	1,2-Dichlorop	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene 2,2-Dichloropropane	2-Butanone (MEK) 2-Chlorotoluene	2-Hexanone 2-Methylnaph	4-Chlorotoluene	4-Methyl-2-pent	Benzene	Bromobenzene	Bromoform	Bromomethane	Carbon tetrachlori	Chlorobenzei	Chloroform	Chlorometha	cis-1,2-DCE	Dibromochloromethane Dibromomethane

Table 6	Soil Analytical Results Summary	Bloomfield Refinery, Bloomfield, New Mexico
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(,z-g-0) †1-E1 NWMS	14 102 14-00 1	< 0.039	0.17	< 0.079	14 0.18	< 0.039	< 0.12	44 < 0.12	77 0.26	77 0.43	21.0 0.00 0	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.079	000	2.5.0	2.5.0	2.2	4 2 3	< 2.3	< 2.3	< 4.6	< 3.4	< 5.7	< 5.7	< 5.7	< 2.8	< 2.3	4 < 2.3	< 5.7	× 2.3	< 2.3	× 2.8	< 2.3	< 5.7	< 2.3	< 5.7	< 5.7	< 2.3	84.6	6 2.8	× 2.3	2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 5.7	× 2.3	× 2.3	< 2.3	
SWMU 13-13 (24-26')	14 10523-00	+ 102/1/01 > 0.071	< 0.071	< 0.14	7'0	< 0.071	< 0.21	7:0	0.7	26.	10.074	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	< 0.14	100	1007	1007	20.2	9	< 0.21	< 0.21	< 0.42	< 0.32	< 0.53	< 0.53	< 0.53	< 0.26	< 0.21	9	< 0.53	< 0.21	< 0.21	< 0.26	< 0.21	< 0.53	< 0.21	< 0.53	< 0.53	12.0 >	< 0.42	0.20	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.53	0.21	< 0.21	< 0.21	
(10-15,)	1410523-004	4 0 032 < 0 032	< 0.032	< 0.065	< 0.032	< 0.032	< 0.097	< 0.097	< 0.032	< 0.065	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.032	< 0.065	000	20.02	20.02	< 0.22	< 0.22	< 0.22	< 0.22	< 0.45	< 0.33	< 0.56	< 0.56	< 0.56	< 0.28	< 0.22	< 0.22	< 0.56	< 0.22	27.0 ×	< 0.28	< 0.22	< 0.56	< 0.22	> 0.56	< 0.56	< 0.22	< 0.45	0.20	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	> 0.56	27.0 >	< 0.22	< 0.22	
('S-2.0) E1-E1 UMWS	1410523-004	4 D 00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	< 0.00191	20.45	0.43	0.43	× 0.45	< 0.45	< 0.45	< 0.45	> 0.90	< 0.67	< 1.1	< 1.1	< 1.1	< 0.56	< 0.45	< 0.45	< 1.1	< 0.45	< 0.45	< 0.56	< 0.45	× 1.1	< 0.45	< 1.1	< 1.1	< 0.45	0.90	0.00	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 1.1	< 0.45	< 0.45	< 0.45	
('6.0-0) E1-E1 UMWS	1410523-004	4 0 00207 4 0 00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	< 0.00207	000	70.72	70.72	< 0.22	< 0.22	< 0.22	< 0.22	< 0.44	< 0.33	< 0.55	< 0.55	< 0.55	< 0.27	< 0.22	< 0.22	< 0.55	< 0.22	× 0.22	< 0.27	< 0.22	< 0.55	< 0.22	< 0.55	< 0.55	< 0.22	< 0.44	× 0.27	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.55	27.0 >	< 0.22	< 0.22	
24-26')	1410213-004	40.20.14 < 0.48	< 0.48	< 0.97	< 0.48	< 0.48	< 1.4	< 1.4	< 0.48	/6'0 >	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.97	100	20.21	20.21	20.5	20.	< 0.21	< 0.21	< 0.41	< 0.31	< 0.52	< 0.52	< 0.52	< 0.26	< 0.21	2.6	< 0.52	< 0.21 < 0.24	> 0.21	92.0 >	< 0.21	< 0.52	< 0.21	< 0.52	< 0.52	× 0.21	< 0.41	07.0 >	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	1.7.0 >	< 0.21	< 0.21	
SWMU 13-12 (16-18')	1410213-003	40.02/2/01 ×	< 0.00184	< 0.00184	< 0.00184	< 0.00184	< 0.00184	< 0.00184	< 0.00184	× 0.00184	< 0.00184	< 0.00184	< 0.00184	< 0.00184	< 0.00184	< 0.00184	< 0.00184	< 0.00184	< 0.00184	< 0.00184	000	27.0 >	27.0 >	< 0.22	< 0.22	< 0.22	< 0.22	< 0.44	< 0.33	< 0.56	< 0.56	< 0.56	< 0.28	< 0.22	< 0.22	< 0.56	27.0 >	27.0 >	27.0 ×	< 0.22	99.0 >	< 0.22	< 0.56	< 0.56	< 0.22	< 0.44	97.0 >	27.0 >	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	95.0 >	27.0 >	< 0.22	< 0.22	
(0.5-2')	1410213-002	+ UZZZU14	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	< 0.00186	0 40	V 0.43	V 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.87	< 0.65	<1.1	< 1.1	< 1.1	< 0.54	< 0.43	< 0.43	< 1.1	< 0.43	< 0.43	< 0.43	< 0.43	<1.1	< 0.43	<1.1	< 1.1	< 0.43	< 0.87	< 0.54	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	<1.1	< 0.43	< 0.43	< 0.43	
(0-0) 21-E1 NMWS	1410213-001	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193		< 0.00193	* * *					<1.1	< 1.1	< 2.1	> 1.6	< 2.6	< 2.6	< 2.6	< 1.3	× 1.1	× 1.1	< 2.6	1.1	1.1	× 13	v 1.1	< 2.6	< 1.1	< 2.6	< 2.6	1.1	< 2.1	5.1.7	111	111	<1.1	< 1.1	1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 2.6	1.1	v 1,1	v 1.1	
SWWN 13-11 (26-28')	1410215-003	10/2/2014	4.4	< 5.0	< 2.5	< 2.5	< 7.5	< 7.5	3.7	1 20	5 Z.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0 0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	
(0.5-2.0) 11-E1 UMWS	1410215-003	4 U 0 0 0 0 0	1.1	< 0.16	0.74	080.0 >	< 0.24	0.34	1.2	0.4	0.00	0.080	< 0.080	080.0 >	080.0 >	080.0 >	080.0 >	080.0 >	< 0.080	1.6	* * *					<1.1	< 1.1	< 2.2	< 1.7	< 2.8	< 2.8	< 2.8	< 1.4	× 1.1	× 1.1	< 2.8	1.1	1.1	< 1.4	×1.1	< 2.8	< 1.1	< 2.8	< 2.8	1.1	2.2	4.1.4	111		<1.1	< 1.1	1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 2.8	1.1	v 1,1	v 1.1	
('8.0-0) 11-E1 UMWS	1410215-003	+ 102/2014 < 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	< 0.00157	· ·	0.0	0.0	0,0	1010	< 1.0	< 1.0	< 2.1	> 1.6	< 2.6	< 2.6	< 2.6	< 1.3	< 1.0	0.1 >	< 2.6	0.1.0	0.10	2 2 2	< 1.0	< 2.6	1.0	< 2.6	< 2.6	0.1.0	< 2.1	5.0	0.10	0.10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.6	0.10	v 10	< 1.0	
2MWN 13-10 (56-28')	1409B75-004	8/19/2014 < 0.49	< 0.49	< 0.98	< 0.49	< 0.49	< 1.5	<1.5	0.61	3.1	× 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.98	10.01	× 0.21	× 0.21	20.2	20.2	< 0.21	< 0.21	< 0.42	< 0.31	< 0.52	< 0.52	< 0.52	< 0.26	< 0.21	2.9	< 0.52	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.52	< 0.52	< 0.21	< 0.42	< 0.20	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.21	< 0.21	
SWWN 13-10 (24-26')	1409B75-003	9/19/2014 < 0.35	< 0.35	< 0.70	< 0.35	< 0.35	< 1.0	< 1.0	0.82	7.7	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.70	700	× 0.21	× 0.21	50.21	150	< 0.21	< 0.21	< 0.42	< 0.31	< 0.52	< 0.52	< 0.52	< 0.26	< 0.21	2.4	< 0.52	< 0.21	5 0.21	< 0.26	< 0.21	< 0.52	< 0.21	< 0.52	< 0.52	12.0 5	< 0.42	07.0	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	17.0 2	< 0.21	< 0.21	
('S-2.0) 01-E1 UMWS	1409b75-002	9/19/2014 < 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	< 0.00177	000	× 0.22	× 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.45	< 0.33	< 0.56	< 0.56	< 0.56	< 0.28	< 0.22	< 0.22	< 0.56	< 0.22	< 0.22	< 0.28	< 0.22	< 0.56	< 0.22	< 0.56	< 0.56	< 0.22	< 0.45	< 0.28	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.56	< 0.22	< 0.22	< 0.22	
('2.0-0) 01-£! UMW2	1409B75-001	9/19/2014 < 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	000	2.2.2	2.2.2	< 2.2	<22	< 2.2	< 2.2	< 4.3	< 3.3	< 5.4	< 5.4	< 5.4	< 2.7	< 2.2	< 2.2	< 5.4	< 2.2	2.2 <	<2.7	<22	< 5.4	< 2.2	< 5.4	< 5.4	< 2.2	< 4.3	1.7	<2.2	<2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 5.4	2.2 >	< 2.2	< 2.2	
SWMU 13-8 (24-26')	1409E14-004	9/26/2014 < 0.50	5.6	> 0.99	1.5	< 0.50	< 1.5	< 1.5	4.4	8.6	0.1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	11	1000	20.0	20.0	× 0.21	10	< 0.21	< 0.21	< 0.43	< 0.32	< 0.53	< 0.53	< 0.53	< 0.27	< 0.21	17	< 0.53	< 0.21	< 0.21	< 0.27	< 0.21	< 0.53	< 0.21	< 0.53	< 0.53	< 0.21 - 0.40	< 0.43	< 0.27	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.53	< 0.21	< 0.21	< 0.21	
SWMU 13-8 (22-24')	1409E14-003	9/26/2014 < 0.20	0.22	< 0.41	< 0.20	< 0.20	< 0.61	< 0.61	0.4	9.1	0.07	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.41	100	> 0.21	> 0.21	202	33	< 0.21	< 0.21	< 0.42	< 0.31	< 0.52	< 0.52	< 0.52	< 0.26	< 0.21	6.1	< 0.52	< 0.21	< 0.21	< 0.26	< 0.21	< 0.52	< 0.21	< 0.52	< 0.52	× 0.21	< 0.42	< 0.20	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.21	< 0.21	
('S-2.0) 8-81 UMWS		S/26/2014 < 0.041	0.31	< 0.081	0.065	< 0.041	< 0.12	< 0.12	0.19	< 0.081	0.07		< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	0.9	0 40	× 0.46				< 0.46	< 0.46	< 0.91	< 0.68	< 1.1	< 1.1	< 1.1	< 0.57	< 0.46	< 0.46	< 1.1	< 0.46	< 0.40	< 0.57	< 0.46		< 0.46			< 0.46	< 0.91			< 0.46		< 0.46	< 0.46	< 0.46	< 0.46				< 0.46	< 0.46	< 0.46	
Leachate DAF (11.25) Cmg/kg) SoilGW		(8)	(8)	4E-02 (8)	6.40E+00 (8)	(8)	5E-01 (8)		┪	4.63E-02 (8)	4 40 0 400	$^{+}$		(8)	(8)	(8)	9.84E-03 (8)	(8)	7.59E-04 (8)		(0) 00 L	0 0	0	4 OSE 02	9	(8)	(8)	8	(8)	(8)	2.76E-02 (8)	(8)	(8)	8	6	2.25E+01 (9)	6)	. (0	6 90F-02 (8)	'n	2.22E-02 (8)	ŀ	_	1.35E-03 (9)		(6)	4 645 ±04	(o)	3F_02 (a)		(6)	1.03E+00 (8)	(8)	(8)		(8)	3.71E+02 (9)	6)	(a)	(8)	
Source		(9)	(4)	(2)	(2)	(4)	(2)	•		(5) 4.6	. (4)		(2)	(2)	(2)	(2)	(2)	(2)	(4)	(2)	(2)	(6)	(c)	(4)	Ĉ G	(2)	(2)	(2)	(2)	(2)	(4)	4)	(2)	(2)	(9)	(9)	(9)	. (9)	(5) (5)	•	(2)		ш	(7)	. (- 1	4	9 .	(7)	(2)	6	(4)	(4)	(4)	•	(4)	(9)	(a)	(2)	(4)	
Non- Residential Soil Screening Level		1 61E+02	3.68F+02	2.69E+02	2.74E+03	4.82E+03	1.21E+03			1.59E+02	- VOIDE104		ı	1.40E+04	ı	ı	ı		2.84E+01	- 1	7.047	1043167	Z.50E+05	1 505±02	L	2.69E+04	L	8.07E+02	L		ш	1.72E+01	2.83E+04	- 1	- 1	3.10E+04	1.80E+03	3 105+03	5 70F+01		2.15E+01			8.60E+01	- 100 0	8.60E+02	- FAELON	+0.1101	3 ODE+03	7.53E+04	2.20E+02	3.23E+01	3.23E+00	3.23E+01		3.23E+02	2.50E+06	3.TUE+U5	1 95F+00	5.19E+02	
Source		r	t	t	E+03 (1)	T	П		7	=+01	. (4)	Ť	T	E+03 (1)	T	T	T	П	┪	┪	T	(1)	Ť	1404	Т	Т	Т	=+02 (1)	Γ	Г	П	7	┪	- 1	7		T	- (2)	T	T	4.93E+00 (1)	T	П	(3)	. 6	Ť	. (4)	T	Ť	1.74E+04 (1)	T	(1) =+00	П	П	П	7	2.40E+05 (2)	T	Ť	T	
Residential Soil Screening Level		1 82	7.51	6.16	2.36E+03	9.75	4.09			4.97E+01	- 4 200 -	07:7	1,11	5.23E+03	2.95	2.93	6.77	1.23	7.42	8.71	000	0.29E+0	7. 0	3 28	2.20	6.16	6.16	1.85	1.23	1.23	1.71E+01	3.56	6.26	3.91	3.10	3.10E+03	1.80	3 101	3.10E+02		4.93			2.40E+00	, Los o	2.40	0 405403	0.40	8 50	1.74	4.90	1.53E+00	1.53	1.53		1.53	2.40	3.10	3.11	9.93E+0	
Analytes		oromethane	9	outadiene	Isopropylbenzene (cumene)	outyl ether (MTBE)	hloride	ene	zene		nzene	32606	etrachloroethene (PCE)		8	chloropropene	Trichloroethene (TCE)	vomethane	ө	Xylenes, Total	Volatile Organics - (EPA Method 8270) mg/kg	Nobelizerie	elizilen	benzene	DOI IZONO	voohenol	orophenol	phenol	Iphenol	henol	luene	yluene	hthalene	lone	vhthalene	lona	9	Distriction	phenzidine		6-Dinitro-2-methylphenol	enyl phenyl ether	oro-3-methylphenol	ine	enyl pnenyl etner	9	01	ene ene	OI G			racene	ene	oranthene	perylene	oranthene	Benzoic acid	10I	ethylyther	Bis(2-chloroisopropyl)ether	
		Dichlomolifle	Ethylhenzene	Hexachlorot	sopropylbe	Methyl tert-L	Methylene c	n-Butylbenz	n-Propylbenzene	Naphthalen	sec-Butylbenzene	Styrene fert-Butvlhenzene	Tetrachloro	Toluene	trans-1,2-D	trans-1,3-Di	Trichloroeth	Trichlorofluc	Vinyl chloride	Xylenes, Tc	Semi Volat	1,2,4-1 IlGIIOI ODEIIZE	1.2-Dichloro	1,3-Dichlorobanzana	1-Methylnanhthalene	2.4.5-Trichloropheno	2,4,6-Trichk	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrop	2,4-Dinitroto	2,6-Dinitrotoluene	2-Chloronat	2-Chloroph	2-Methylnaphthalene	2-Methylpheno	2-Nitroaniline	2+4-Methylph	3.3'-Dichlorohenz	3-Nitroaniline	4.6-Dinitro-2	4-Bromophe	4-Chloro-3-:	4-Chloroaniline	4-Chloroph	4-Nitroaniline	4-Nitropner	Acenaphthylene	Aniline	Anthracene	Azobenzene	Benz(a)antf	Benzo(a)pyrene	Benzo(b)flu.	Benzo(g,h,i)perylene	Benzo(k)flu	Benzoic aci	Benzyl alco	Bis (2-chloro	Bis(2-chloro	

Table 6
Soil Analytical Results Summary
Bloomfield Refinery, Bloomfield, New Mexico

servation	Residential Soil Screening I avail	Source Source So So Non- Residential Soil Screening	Leachate DAF (11.25)	Source Source	('S-8.0) 8-81 UMWS	SWMU 13-8 (22-24')	SWMU 13-8 (24-26')	('2.0-0) 01-£1 UMW2	('S-2.0) 01-£1 UMWS	SWWN 13-10 (24-26')	SWMU 13-10 (26-28')	('3.0-0) 11-£1 UMW2	('S-8.0) 11-81 UMW8	('82-82) 11-81 UMWS	('2-3.0) S1-81 UMWS	SWMU 13-12 (16-18')	SWMU 13-12 (24-26')	('6.0-0) E1-E1 UMWS	('S-8.0) E1-E1 UMWS	(101-12) (10-15)	SWWN 13-13 (24-26')	('S-2'0) \$1-81 UMWS	
		1				1409E14-002	1409E14-003	1409E14-004	1409B75-001	1409b75-002 140	1409B75-003 140	1409B75-004 141	1410215-003 14102	1410215-003 14102	1410215-003 1410213-001	3-001 1410213-002	3-002 1410213-003	03 1410213-004	1410523	004 1410523-004	1410523-004	1410523-004	1410214-001
						9/26/2014	9/26/2014	2014	3/2014	2014	2014	2014	10/2/2014 10/2	10/2/2014 10/2	10/2/2014 10/2/2014	10/2/2014	Г	Г	Г	10/7/2014	10/7/2014	10/7/2014	10/2/2014
Bis(2-ethylhexyl)phthalate	3.80E+02	(1) 1.83	1.83E+03 (4)	1.12E+02	02 (8)	1.1	< 0.52	< 0.53	< 5.4 < 0	0 > 95.0 >	< 0.52 < 0.	< 0.52 < 2.6	6 < 2.8		0 < 2.6	< 1.1	> 0.56	< 0.52	< 0.55	1.1	> 0.56	< 0.53	< 5.7
Butyl berzyl phthalate	2.60E+02	(3) 9.10	9.10E+03 (7)) 7.54E+00	(6) 00	< 0.46	< 0.21			Ī	< 0.21 < 0.	< 0.21 < 1.0	0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Carbazole					Ŀ	< 0.46							0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Chrysene	1.53E+02	(1) 3.23	3.23E+03 (4)	ш	02 (8)	< 0.46		< 0.21		< 0.22		.21 < 1.0	0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Di-n-butyl phthalate	6.16E+03	(1) 2.69	2.69E+04 (5)	1.90E+01	01 (8)	< 1.1	< 0.52				< 0.52 < 0.	< 0.52 < 2.6	6 < 2.8		0 < 2.6	< 1.1	< 0.56	< 0.52	< 0.55	< 1.1	< 0.56	< 0.53	< 5.7
Di-n-octyl phthalate					Ŀ	< 0.91	< 0.42					< 0.42 < 2.1	1 < 2.2		0 < 2.1	< 0.87	< 0.44	< 0.41	< 0.44	< 0.90	< 0.45	< 0.42	< 4.6
Dibenz(a,h)anthracene	1.53E-01	(1) 3.23	3.23E+00 (4)	3.44E+00	(8)	< 0.46	< 0.21			< 0.22 < 0.21	.21 < 0.21	.21 < 1.0	1.1 > 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Dibenzofuran					Ŀ	< 0.46	< 0.21	< 0.21	< 2.2		.21 < 0.21	.21 < 1.0	1.1 > 0		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Diethyl phthalate	4.93E+04	(1) 2.15	2.15E+05 (5)) 5.51E+0'	01 (8)	< 0.46						.21 < 1.0	0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Dimethyl phthalate	6.11E+05	(1) 2.38	2.38E+06 (5)	9:06E+02	02 (8)	< 0.46	< 0.21	< 0.21		< 0.22 < 0.21	.21 < 0.21	.21 < 1.0	0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Fluoranthene	2.32E+03	(1) 1.00	1.00E+04 (5)	7.52E+02	02 (8)	< 0.46	< 0.21	< 0.21		< 0.22 < 0.21		< 0.21 < 1.0	0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Fluorene	2.32E+03	(1) 1.00	1.00E+04 (5)) 4.50E+0	01 (8)	< 0.46	0.33	1.1		< 0.22	0.25	0.4 < 1.0	0 < 1.1		0 < 1.1	< 0.43	< 0.22		0.4 < 0.22	< 0.45	< 0.22	16:0	< 2.3
Hexachlorobenzene	3.33E+00	(1) 1.60	1.60E+01 (4)	·) 5.19E-02	02 (8)	< 0.46	< 0.21	< 0.21	< 2.2 < 0	< 0.22	< 0.21 < 0.21	.21 < 1.0	1.1 > 0		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Hexachlorobutadiene	6.16E+01	(1) 2.69	2.69E+02 (5)	() 4.94E-02	02 (8)	< 0.46	< 0.21	< 0.21			< 0.21 < 0.21	.21 < 1.0	0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Hexachlorocyclopentadiene	3.70E+02	(1) 8.67	8.67E+02 (5)	Н	01 (8)	< 0.46							0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Hexachloroethane	4.31E+01	(1) 1.88	1.88E+02 (5)	3.72E-02	02 (8)	< 0.46	< 0.21				.21 < 0.21	.21 < 1.0	0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Indeno(1,2,3-cd)pyrene	1.53E+00	(1) 3.23	3.23E+01 (4)	ш	01 (8)	< 0.46			< 2.2 < 0	< 0.22 < 0.21					0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Isophorone	5.61E+03	(1) 2.70	2.70E+04 (4)	Н	(8) 00	< 1.1						.52 < 2.6	6 < 2.8		0 < 2.6	< 1.1	< 0.56	< 0.52	< 0.55	< 1.1	< 0.56	< 0.53	< 5.7
N-Nitrosodi-n-propylamine	6.90E-02	(3) 2.50	2.50E+00 (7)	.) 1.24E-04	04 (9)	< 0.46	< 0.21			< 0.22 < 0.21	.21 < 0.21	.21 < 1.0	0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
N-Nitrosodiphenylamine	7.94E-03	(1) 1.71	1.71E-01 (4)	_	06 (8)	< 0.46	< 0.21	< 0.21		< 0.22 < 0.21	.21 < 0.21		0 < 1.1	1	0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Naphthalene	4.97E+01	(1) 1.59	1.59E+02 (5)	_	02 (8)	< 0.46	1.2	4			0.69	0.85		1	0 < 1.1	< 0.43	< 0.22)	0.72 < 0.22	< 0.45	< 0.22	2	< 2.3
Nitrobenzene	6.04E+01	(1) 2.93	2.93E+02 (4)	 9.10E-03 	03 (8)	< 1.1	< 0.52			< 0.56 < 0			6 < 2.8	1	0 < 2.6	< 1.1	< 0.56	< 0.52	< 0.55	< 1.1	< 0.56	< 0.53	< 5.7
Pentachlorophenol	9.85E+00	(1) 4.45	4.45E+01 (4)	Н	02 (8)	< 0.91	< 0.42	< 0.43			< 0.42 < 0.		6 < 3.9		0 < 3.7	< 1.5	< 0.78	< 0.72	< 0.76	> 1.6	< 0.78	< 0.74	< 8.0
Phenanthrene	1.74E+03	(1) 7.53	7.53E+03 (5)	-	01 (8)		0.55	1.2			0.43	0.66	0 < 1.1	1	0 < 1.1	< 0.43	< 0.22	_	0.77 < 0.22	< 0.45	< 0.22	2.2	< 2.3
Phenol	1.83E+04	(1) 7.74	7.74E+04 (5)) 2.94E+01	01 (8)	< 0.46	< 0.21				< 0.21 < 0.21	.21 < 1.0	0 < 1.1		0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Pyrene	1.74E+03	(1) 7.53	7.53E+03 (5)	Щ	02 (8)	< 0.46									0 < 1.1	< 0.43	< 0.22	< 0.21	< 0.22	< 0.45	< 0.22	< 0.21	< 2.3
Pyridine	7.80E+01	(2) 1.00	1.00E+03 (6)	1.09E-01	01 (9)	< 1.1	< 0.52	< 0.53	< 5.4 < 0	< 0.56 < 0	< 0.52 < 0.	< 0.52 < 2.6	6 < 2.8		0 < 2.6	× 1.1	< 0.56	< 0.52	< 0.55	< 1.1	< 0.56	< 0.53	< 5.7
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																							
Gasoline Range Organics (GRO)				'	\dashv	65	38	350	44	8.3	52	44 < 3.4	4	250	430 < 3.9	< 3.8	< 3.4	< 48	< 3.4	< 3.7	< 3.2	130	110
Diesel Range Organics (DRO)	1.00E+03	(11) 3.80	3.80E+03 (11)	- (t	\dashv	1300	1300	4100	360	220	450	450	21	1400	2000	32	32 < 11		066	60 < 11	11	2100	950
Motor Oil Range Organics (MRO)	3,00E+03	(12) 5.00	5.00E+03 (12)			1400	1400 < 520	< 530	780	330	62 < 52	2 < 52		2500 < 530	v 23	v 23	v 22	< 510		140 < 56	v 22	< 520	099
- No screening level or analytical result available	1	L	1		-												1						

No screening level or analytical result available

NuleD - Risk Assessment Guidance for Site investigations and Remediation (Dec. 2014)

EPA. Regional Screening Level (April 2009)

(1) WINED Presidential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential Screening Level

(3) EPA Residential Screening Level

(4) RINED Order because the constituent is isted as carcinogenic

(4) MMED Order because the constituent is isted as carcinogenic

(5) EPA Industrial - Screening Level

(6) EPA Industrial - Screening Level

(7) EPA Industrial - Screening Level

(8) EPA Industrial - Screening Level

(9) EPA Industrial - Screening Level

(9) EPA Industrial - Screening Level

(9) EPA Industrial - Screening Level

(10) Solicov MikED Dutor Arturution Factor (DA) = 11.25

(10) Solicov MikED Dutor Arturution Factor (DA) = 11.25

(10) Solicov MikED Dutor Arturution Factor (DA) = 11.25

(10) Solicov MikED Tobe 6 - 2 TPH Soil Screening Levels 'uknown oil" with DAF = 1.0 - see report Section 5 for use of

screening levels (12) NMED Table 6-2 TPH Soil Screening Levels "Waste Oil" with DAF = 1.0 - see report Section 5 for use of

screening levels
The arent screening level adjusted for site-specific
background concentration
Bold represents value above Non-Residential Screening Level

Table 6 Soil Analytical Results Summary Bloomfield Refinery, Bloomfield, New Mexico

SWMU 13-18 (22-24') 9/19/2014	 < 2.5 < 2.5 < 2.5 < 0.16 < 0.10 < 2.0 < 1.1 < 1.4 < 1.4 < 2.2 < 1.4 < 2.5 < < 0.26 < < 0.26 < < 0.26 	0.039 0.039	0.39 0.039 0.078 0.039 0.039 0.039 0.039
(12-14') 81-81 UMWS (12-14')	 5.7 6.5.7 6.5.7 6.0.23 6.0.23 7.2 8 6.0.23 6.0.039 6.0.039 6.0.039 6.0.039 	0.00199 0.00	> 0.00950 0.00190 0.00190 0.00190 0.00190 0.00190 0.00190 0.00190 0.00190 0.00190
('S-3.0) 81-81 UMWS (80.5-2')	 2.8 4 5.10 6.55 7.5 1.13 6.75 1.13 6.75 1.13 6.75 1.13 6.0.28 6.0.28 6.0.28 6.0.26 7.5 7.5 7.5 8.4 1.0 /ul>	0.00196 0.00	> 0.00981 0.00196 0.00196 0.00196 0.00196 0.00196 0.00196 0.00196 0.00196 0.00196
(409680-001) 81-8: (0-0.5')	2.7 (4.44) 0.11 0.52 0.11 0.52 0.17 7.2 0.27 7.2 0.27 7.2 0.27 7.2 0.27 6.27 0.27 6.27 0.27 6.27 0.27 6.27 0.27 6.27 0.27 6.27 0.27 6.27	0.00162 (0.0	0.0191 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182 < 0.00182
1410080-008 9/30/2014	 < 2.6 < 2.6 < 0.16 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.20 < 0.20 < 0.26 < 0.26 < 0.26 < 0.24 < 0.24 	0.0099	0.099 0.0099
2WMU 13-17 (6-8') 1410080-007 9/30/2014	3.0	0.00233 0.0023	0.00177 0.00177 0.00233 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.00230 0.0020000000000
14100800-006 14100800-006 1410080-006	2.7	0.00199	0.00988 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0.000198 < 0
('6.0-0) 71-£1 UMW8 (9.0.5')	2.7 4.9 170 0.32 0.32 0.32 180 180 180 180 0.27 0.27 0.27	0.00209 0.0020	0.0104 0.00209 0.00209 0.00209 0.00209 0.00209 0.00209 0.00209 0.00209 0.00209
SWMU 13-16 (26-28') 924/2014	 2.6 2.6 2.6 160 100 /ul>	010 010 010 010 010 010 010 010	0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10
SWMU 13-16 (18-20') 9/24/2014	2.7	0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.0066 0.00666 0.00	0.056 < 0.0056 0.0056 0.011 0.056
972472014 872472014	4 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2	000177 000	0.00857 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.00171 < 0.0017
1409942-2001 9724-2001 1409942-2001	2.6 64 6 64 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.00195	0.00975
1410360-005 1066:2014	 65.1 65.1 7 60.31 80.20 80.20 80.20 80.20 80.17 80.17<	0.025 0.	2.2.5 c c c c c c c c c c c c c c c c c c c
1410860004 1006/2014	2.8 6.2 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.020 0.	2.0 0.20 0.20 0.41 0.20 0.61 0.20 0.20 0.20 0.20 0.20 0.20 0.20
1410360003 10672014	5.5.5 6.5.5 W. M.	0.04 0.	60.41 60.41 60.41 60.81 60.41 71.2 60.41 60.41 60.41 60.41
1410862014 106/22014	62.8 3.9 0.011 0.54 0.011 0.54 0.019 7.8 0.028 0	0.00199 0.00199	0.001994 0.00199 0.00199 0.00199 0.00199 0.00199 0.00199 0.00199 0.00199
1410(82014 1 410(82014 1 410(82014	2.6 4.2 2.20 0.23 0.23 0.23 0.24 0.23 0.078 0.07	0.00183 0.00183	0.00193 c.0.00193
50727201 4 (26-28') 4 (26-28')	2.5 3.0 2.5 3.0	(0.035 (0.03	6 0.35 6 0.035 6 0.035 6 0.070 6 0.035 7 0.035 8 0.035 8 0.035 9 0.035
(2014 (2-4))	 < 2.9 NA < 0.12 NA < 0.12 < 0.12 < 0.29 < 0.20 <l< td=""><td>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td><td> 0.0106 0.0211 0.00211 0.00211 0.00211 0.00211 0.00211 0.00211 0.00211 0.00211 </td></l<>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	 0.0106 0.0211 0.00211 0.00211 0.00211 0.00211 0.00211 0.00211 0.00211 0.00211
Source	3.68E+00 (8) 3.20E+00 (18) 1.52E+00 (18) 1.10E+02 (8) 5.28E+02 (8) 5.28E+02 (8) 5.51E+05 (8) 5.51E+05 (8) 5.51E+05 (8) 7.10E+02 (8) 7.1	0	88888888
Source	(5) (6) (7) (8) (9) (9) (9) (9) (9) (9) (9) (9) (9) (9	+ 0 + 0 + 0 + 0 + 0 0 + 0 0 + 0 0 + 0 0 + 0 0 0 + 0 <td>(6) (7) (8) (7) (8) (9) (9) (9) (9)</td>	(6) (7) (8) (7) (8) (9) (9) (9) (9)
Non- Residential Soil Screening Level	1.42E+02 2.16E+01 4.36E+03 1.48E+02 6.69E+01 1.34E+02 3.00E+02 3.00E+02 3.00E+02 1.76E+03 1.77E+03 1.77E+03 1.16E+02 1.16E+03 1.77E+03 1.16E+03 1.17E+03 1.16E+03 1.17E+03 1.16E+03 1.17E+03 1.1		1.62E+03 5.25E+01 4.12E+02 1.66E+04 2.87E+01 2.01E+02 7.08E+02 1.30E+02 6.74E+01 1.00E+04
Source	3.13E-01 (1) 1.6E-06 (1) 1.6E-07 (1) 1.6E-07 (1) 1.0E-07 (1) 1.0E-	144E-04 17 17 144E-04 17 158E-05 17 158E-05 17 164E-05 17 164E-05 17 164E-05 17 164E-07 17 164E-07 17 164E-07 17 17 17 17 17 17 17	1,55E+03 (1) 1,07E+01 (1) 3,78E+02 (1) 1,90E+04 (1) 5,90E+00 (1) 4,11E+01 (1) 1,58E+02 (1) 1,38E+01 (1) 7,80E+02 (2)
Reside			1.55 1.07 1.90 5.90 5.90 1.56 1.36 7.80 7.80 7.80
		1.1. L'a tet abundoutene per minior occopyings and the compounds of the compound of the compou	
Analytes		A factorial federal for the factorial federal	
	Ba mm	1.1.2° franchiocellane 1.2.2° franchiocellane 1.2.2° franchiocellane 1.2.2° franchiocellane 1.2.2° franchiocellane 1.2.3° franchiocellane 1.2° franchiocellane 1.3° fraibrocellane 1	Carbon disuffide Carbon disuffide Carbon teachbride Chlorobe trans (ethyl chloride) Chlorobe trans (ethyl chloride) Chloromethane cals 1.2-DCE dis 1.2-DCE distribution chloride Distribution chloride Distribution chloride
Metals (mg/kg)	American tring Agy Areanic Areanic Beryllum Chromium Macuum Chromium Chromi	11.1.1.2 intraction continuence against according to the continuence against an experience and the continuence against a continuence against a continuence according to the continuence accord	Carbon disulfide Carbon tet enchloride Carbon tet enchloride Chloroberzene Chloroberzene Chloropersene Chloromethane dist.12-DCE sist.12-DCE sist.12-DCE Dibromochloromethane Dibromochloromethane

Table 6	Soil Analytical Results Summary	Bloomfield Refinery, Bloomfield, New Mexico

SWMU 13-18 (22-24')	9/19/2014	0.039	0.039	0.039	0.039	0.12	0.12	0.078	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.078	< 0.21	0.21	0.21	0.21	0.21	0.21	0.42	0.31	0.52	0.52	0.26	0.21	0.21	0.52	0.21	0.21	0.26	0.52	0.21	0.52	0.21	0.42	0.26	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.52	0.21	0.21	0.21
SWMU 13-18 (12-14')	1409b80-003 1	0.00190	0.00607	0.00190	0.0047 <	0.00190	0.00190	0.00269	> 0.00190	0.00190	0.00190	0.00354 <	0.00190	0.00190	0.00190	> 0.00190	0.00921 <	< 0.23	ľ	0.23	0.23	0.23	0.23	> 0.47	0.35	0.59	0.59	0.29	0.23	0.23	0.59	0.23	0.23	0.29	> 65.0	0.23	0.59	0.23	> 0.47	> 0.29	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	> 65.0	0.23	0.23	0.23
('S-2.0) 81-E1 UMWS	1409b80-002	0.00196 <	0.00196	0.00196	0.00196	> 0.00196	0.00196	0.00196	> 0.00196 <	> 0.00196	0.00196	0.00205	0.00196 <	0.00196	0.00196	> 0.00196 <	0.00196	0.22	0.22	0.22	27.0	0.22	0.22	> 0.45	0.34	0.56	0.00	0.28	0.22	0.22	0.56	0.22	0.22	0.28	0.56	0.22	0.50	0.22	> 0.45	0.28	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	> 95.0	0.22	0.22	0.22
('2.0-0) 81-£1 UMW2	409b80-001 1	0.00182 <	0.00342 <	0.00182 <	0.00182 <	0.00182 <	0.00182 <	0.00182 <	0.00182 <	0.00182 <	0.00182	0.00224	0.00182 <	0.00182	0.00182 <	0.00182 <	0.00235 <	> 0.44	> 0.44	> 0.44	0.44	0.44	0.44	> 68.0	> 29.0	T		0.55	> 44	> 0.44	7.1	0.44	> +44	0.55	1.1	> 0.44		0.44	> 68.0	> 0.55	0.44	0.44	0.44	> 0.44	0.44	0.44	0.44	> 0.44	1.1	0.44	0.44	> 0.44
SWMU 13-17 (24-26')	410080-008 1	> 660.0	0.54	0.13 <	> 660.0	> 0:30	0.64 <	2.4 <	0.2 <	> 660.0	0.099	0.099	> 660.0	0.099	> 660.0	> 660.0	0.88	< 0.21		0.21	0.21	0.21	0.21	0.42	0.31	0.52	0.52	0.26	0.21	> 4.9	0.52	0.21	< 0.21	< 0.26	0.52 <	< 0.21 <	0.52	0.21	. 0.42	> 26	V .	< 0.21	v	0.21	V .	× 0.21		0.21	0.52 <	0.21	0.21	0.21
(.8-9) \(\alpha\) - (.8-9)	410080-007 1	0.00233 <	0.00526	0.00233	0.00233 <	0.00233 <	0.00233	0.00418	0.00462	0.00233 <	0.00233	0.00611 <	0.00233 <	0.00233	0.00233	0.00233 <	0.00388	> 0.47		> 0.47	0.47	0.47	> 0.47	0.94	0.70	1.2	12 0	> 65.0	< 0.47		< 1.2	0.47	Ĺ	< 0.59	1.2	> 0.47	7 2 4	0.47	0.94	> 65.0		< 0.47	> 0.47	> 0.47		< 0.47	ľ	> 0.47	1.2 <	0.47	> 0.47	> 2.47
('S-8.0) T1-E1 UMWS	9/30/2014	> 0.00198	0.00198	0.00198	> 0.00198	> 0.00198	0.00198	0.00198	0.00198	> 0.00198	0.00198	0.00198	> 0.00198	0.00198	0.00198	> 0.00198	0.00198	< 0.43		> 0.43	0.43	0.43	0.43	> 2.0.87	> 0.65		v v	0.54	> 0.43	0.43	1.1	0.43	> 0.43	0.54	1.1	0.43	2 5	0.43	> 2.0.87	> 0.54		0.43	0.43	> 0.43	0.43		0.43	> 0.43	1,1	0.43	0.43	0.43
('8.0-0) TI-EI UMWS	1410080-005	> 0.00200	0.00209	0.00209	> 0.00209	> 0.00200	0.00209	0.00209	> 0.00200	> 0.00209	0.00209	> 0.00209	> 0.00209	0.00209	0.00209	> 0.00200	0.00209	v 1.1	1.1	1.1	1.1	1.1.7	1.1	< 2.1	> 1.6	2.6	2.5	4.3	1.1	1.1	2.6	1.1	× 1.1	v v	2.6	× 1.1	9.7	4.1	< 2.1	< 1.3	1.1	1.1	1.1	1.1	1.1	V V	1.1	1.1	< 2.6	- L	1.1.	1.1
SWMU 13-16 (26-28')	1409E42-004	0.10	0.10	0.10	0.10	> 0.30	0.30	0.45	< 0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20	< 0.21	< 0.21	. 0.21	12.0	0.21	0.21	. 0.41	0.31	0.52	0.52	0.26	. 0.21	1.7	0.52	0.21	. 0.21	0.26	< 0.52	0.21	0.52	0.27	0.41	0.26	0.21	0.21	0.21	. 0.21	0.21	0.21	0.21	0.21	0.52	0.21	0.21	0.21
SWMU 13-16 (18-20')	1409E42-003	< 0.056	0.056	0.056	< 0.056	< 0.17	< 0.17	c 0.11	< 0.056	< 0.056	0.056	< 0.056	< 0.056	99000	0.056	< 0.056	< 0.11	< 0.22		< 0.22	22.0 >	0.22	0.22	< 0.45	< 0.33	0.56	0.00	0.28	< 0.22	c 0.22	0.56	0.22	< 0.22	0.28	c 0.56	< 0.22	0.00	0.22	< 0.45	< 0.28	0.22	0.22	0.22	< 0.22	< 0.22	27.0	0.22	0.22	< 0.56	0.22	0.22	c 0.22
('S-2.0) at-81 UMWS	1409e42-002 9/24/2014	< 0.00171	0.00476	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	0.00171	< 0.00171	< 0.00171	< 0.00171	< 2.2	< 2.2	< 2.2	2.2	< 2.2	< 2.2	< 4.4	< 3.3	5.5	5.55	< 2.8	< 2.2	< 2.2	< 5.5	< 2.2	< 2.2	< 2.8	< 5.5	< 2.2	5 5.5	< 2.2	< 4.4	< 2.8	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	2.2	< 2.2	< 2.2	< 5.5	< 2.2	< 2.2	< 2.2
('6.0-0) a1-£1 UMW2	1409e42-001	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.00195	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.87	< 0.65	1.1		< 0.54	< 0.43	< 0.43	< 1.1	< 0.43	< 0.43	< 0.54	< 1.1	< 0.43		< 0.43	< 0.87	< 0.54	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 1.1	< 0.43	< 0.43	< 0.43
SWWN 13-15 (24-26')	1410360-005	< 0.25	0.46	< 0.25	< 0.25	< 0.76	< 0.76	1.5	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.50	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.40	< 0.30	< 0.50	< 0.50	< 0.25	< 0.20	2.7	< 0.50	< 0.20	< 0.20	< 0.25	< 0.50	< 0.20	< 0.50	< 0.20	< 0.40	< 0.25	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 0.20	< 0.20
SWMU 13-15 (14-16')	1410360-004	< 0.20	0.63	< 0.41	< 0.20	< 0.61	4.1	2.2	0.38	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	2.1	< 0.22		< 0.22	< 0.22	< 0.22	< 0.22	< 0.44	< 0.33	< 0.55	< 0.55	< 0.28	< 0.22	3	< 0.55	< 0.22	< 0.22	< 0.28	< 0.55	< 0.22	< 0.55	< 0.22	< 0.44	< 0.28	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.55	< 0.22	< 0.22	< 0.22
SWMU 13-15 (15-14.)	1410360-003	< 0.41	0.84	< 0.41	< 0.41	< 1.2	1.2	2.3	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	2.8	< 0.23	< 0.23	< 0.23	< 0.23	< 0,23	< 0.23	< 0.46	< 0.34	< 0.57	< 0.57	< 0.29	< 0.23	2.5	< 0.57	< 0.23	< 0.23	< 0.29	< 0.57	< 0.23	< 0.57	< 0.23	< 0.46	< 0.29	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.23
('2-2.0) 21-E1 UMWS	1410360-002	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.45	< 0.34	< 0.57	< 0.57	< 0.28	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.28	< 0.57	< 0.23	< 0.57	< 0.23	< 0.45	< 0.28	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.23
('2.0-0) 21-£1 UMW2	1410360-001	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.00193	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.88	99.0 >	1.1	×1.1	< 0.55	< 0.44	< 0.44	< 1.1	< 0.44	< 0.44	< 0.55	< 1.1	< 0.44	V 1.1	< 0.44	< 0.88	< 0.55	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 1.1	< 0.44 < 0.44	< 0.44	< 0.44
2MWN 13-14 (56-28.)	1410214-003	< 0.03	0.71	0.070	< 0.035	< 0.10	0.19	1.5	0.38	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.070				< 0.21	4.0		< 0.41			< 0.52	< 0.26	< 0.21	4.7	< 0.52	< 0.21	< 0.21	< 0.26	< 0.52	< 0.21	< 0.52	< 0.21	< 0.41	< 0.26	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21 < 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.21	< 0.21
(2-4')	1410214-002			0.0258		< 0.00211	< 0.00211			< 0.00211	< 0.00211	< 0.00211	< 0.00211	V	< 0.00211	< 0.00211	< 0.00211	v 1.1	< 1.1	< 1.1	1.1	(8) < 1.1	1.1	< 2.3	< 1.7	× 2.9	8.2 >	4.1.4	< 1.1	< 1.1	< 2.9	. 1.1	< 1.1	4.1.4	< 2.9	× 1.1	6.2.5	< 1.1	< 2.3	< 1.4	1.1	1.1	. 1.1	× 1.1	1.1		. 1.1	< 1.1	< 2.9	v	v 1.1	1.1
Leachate DAF (11.25) (mg/kg) SoligW		4.07E+00 (8)	_	_	-	Н	+	4.63E-02 (8)	Н	1.16E+01 (8)	1.81E-01 (8)		2.64E-01 (8)		32E+00 (8)	7.59E-04 (8)	(8)	(8)	2.57E+00 (8)		4.05E-02 (8)	2E+01 (8)	79E-01 (8)	34E-01 (8)	3E+00 (8)	77E-01 (8)	74F-03 (8)	1E+01 (8)	48E-01 (8)	11E+01 (9)	3.25E+01 (9)	(6)	2.14E+00 (9)	(8)	2.22E-02 (8)	·	1 355 03 (0)	(a)	1.13E-02 (9)	Ħ	4.64E+01 (8)	3 83E-02 (a)		5.74E-03 (9)			(0)	40E+01 (8)	'1E+02 (9)	2 59F-01 (9) < 1.1	40E-04 (8)	36E-02 (8)
Source		(2)	(4)	(2)	(4)	(2)		(2)	Ŀ	(2)	(2)	(2)	(2)	(c)	(2)	(4)	(2)	(2)	(2)	Ħ	(4)	(2)	(2)	(2)	(2)	(2)	£ 4	(2)	(2)	(9)	(9)	2 -	(9)	((2)		┸	()	(7)		(2)	. 6	(2)	(7)	(4)	(4)		4	(9)	9	(9)	4
Non- Residential Soil Screening Level		1.61E+02						1.59E+02	Ш	1.02E+04	1.20E+02			┸	1.13E+03	Ш		L	2.50E+03	Щ	4	┸	┸	Ц	Ц	4	┸	丄	Ш	4.10E+03	_	- 100	3.10E+03	5.70E+01	2.15E+01	٠	⊥	0.00=10	8.60E+02	Ш	1.51E+04	4	7.53E+04	ΙI	4	3.23E+00	-			3.10E+05		
Residential Soil Outroe		(1)	T	Т	П	П		E+01 (1)	Ħ	E+03 (1)	:+02 (1)	П	=+02 (1)	T	1.23E+03 (1)	П	102	Г	(1)	Ħ	101	T	T	П	T	†	100	t	П	E+02 (2)	T	t	П	(1)	4.93E+00 (1)			t	E+01 (3)	T	(1)	- (3)	t	П	T	1-01	Т	П	П	=+04 =+02 (2)	Т	П
Residen		1.82	7.51E+01	2.36	9.75	4.09E+02	1	4.97E+01		7.26E+03	1.11	5.23	2.95	2.93	1.23	7.42	8.71	8.29	2.15E+03		3.28	6.16	6.16	1.85	1.23	1.23	3.56	6.26	3.91	3.10E+02	3.10E+03		3.10E+02	1.18	4.93		0 40	7:40	2.40E+01		3.48E+03	8 50	1.74E+04	4.90E+00	1.53	1.53		1.53	2.40	3.10E+04	3.11	9.93
Analytes		ifluoromethane	cene	Rexactiorobutadierie Isopropylbenzene (cumene)	t-butyl ether (MTBE)	e chloride	nzene	106 106	benzene		rt-Butylberizene etrachloroethene (PCE)	(s-1,2-DCE	-Dichloropropene	Tichlorofluoromethane	ride	Xylenes, Total	atile Organics - (EPA Method 8270) mg/kg hlorobenzene	2-Dichlorobenzene	,3-Dichlorobenzene	orobenzene	1-inetry inaprictatene 2.4.5-Trichlorophenol	thorophenol	,4-Dichlorophenol	,4-Dimethylphenol	ophenol	otoluene	aphthalene	henol	Methylnaphthalene	Shenol	anol	+4-Methylphenol	-Dichlorobenzidine froaniline	4,6-Dinitro-2-methylphenol	phenyl phenyl ether	3-methylphenol	sheny ohenyl ether	iline	lona	hene	nylene	90	ine	z(a)anthracene	Benzo(a)pyrene Benzo(h)filiozanthene	i) i) perviene	luoranthene	Benzoic acid	conol	Bis(2-chloroethyl)ether	proisopropyl)ether
		Dichlorodi	Ethylbenzene	Sopropyl	Methyl ter	Methylene chloride	n-Butylbenzene	Naphthalene	sec-Butylbenzene	Styrene	Tetrachlor	Toluene	trans-1,2-	Trioplorgo	Trichlorof	Vinyl chloride	Xylenes	12.4-Tric	1,2-Dichlo	1,3-Dichlo	1,4-Dichk	2.4.5-Tric	2,4,6-Tric	2,4-Dichlo	2,4-Dimet	2,4-Dinitro	2,4-Unitro	2-Chloron	2-Chlorop	2-Methyln	2-Methylpher	2-Nitropheno	3+4-Meth	3,3'-Dichloro	4,6-Dinitro	4-Bromor	4-Chloro-	4-Chlorop	4-Nitroaniline	4-Nitroph	Acenapht	Acenaphthylene	Anthracene	Azobenzene	Benz(a)aı	Benzo(a)	Benzo(a,t	Benzo(k)f	Benzoica	Bis (2-chlo	Bis(2-chlo	Bis(2-chk

Table 6
Soil Analytical Results Summary
Bloomfield Refinery, Bloomfield, New Mexico

					-14 (2-4')	¢ (26-28°)	(.5.0-0) 51	(2-5.0) 81	(15-14,)	(14-16,)	2 (24-261)	(0-0.5')	16 (0.5-2')	(18-20,)	(26-28")	('č.0-0) TI	('S-8.0) TI	(,8-9) ረነ-			(12-141)	8 (22-241)
Analyres	Residential Soil Screening Level	Non- Residential Soil Screening Level	Source	Leachate DAF (11.25) (mg/kg) (mg/kg)	Source	1-EI UMWS	1-EI UMWS	r-ei umws	1-E1 UMWS	1-EI UMWS	I-EI NWMS	r-EI UMWS	1-EI UMWS	1-E1 UMWS	I-EI UMWS	r-ei umws	1-E1 UMWS	-SI UMWS	I-EI UMWS	1-E1 UMWS	I-EI NWMS	1-E1 UMWS
					1410214-002	1410214-003 1	1410360-001 1	1410360-002 1	1410360-003 14	1410360-004 14	1410360-005 140	1409e42-001 140 9/24/2014 9	1409e42-002 14 9/24/2014 9	1409E42-003 140	1409E42-004 1410 9/24/2014 9/3	1410080-005 1410 9/30/2014 9/3	1410080-006 1410 9/30/2014 9/3	1410080-007 1410 9/30/2014 9/30	1410080-008 1409bi	1409b80-001 1409b80-002 9/19/2014 9/19/2014	H002 1409b80-003	003 1409B80-4
Bis(2-ethylhexyl)phthalate	П	Ц	н	Н	< 2.9	П						v			< 0.52 < 2.6	Ì			Ť	Ì	< 0.59	< 0.52
Butyl berzyl phthalate	2.60E+02 (3)	9.10E+03	(7)	7.54E+00 (9	(9) < 1.1		× 0.44	Ť	< 0.23		× 0.20		× 2.2 × 0		< 0.21 < 1.7	× 0.43			Ì	< 0.22	< 0.23	< 0.21
Chrysene	1,53E+02 (1)	┸	(4)	1.05E+02 (8	(8) < 1.1	< 0.21	T	Ť	0.23	< 0.22		< 0.43	< 2.2	< 0.22 < 0	< 0.21	< 0.43			Ť	< 0.22	< 0.23	< 0.21
Di-n-butyl phthalate	6.16E+03 (1)) 2.69E+04	(2)	1.90E+01 (8			П	Ů	П			Ì				V		< 0.52		V	< 0.59	< 0.52
Di-n-octyl phthalate			ш	\neg	< 2.3			V		< 0.44					< 0.41 < 2.1					V	< 0.47	< 0.42
Dibenz(a,h)anthracene	1.53E-01 (1	3.23E+00	(4) 3.4	3.44E+00 (8)	< 1.1		< 0.44	< 0.23			< 0.20 < 0.	< 0.43 < 2					43 < 0.47		× 0.44		< 0.23	< 0.21
Diethyl obthelete	A 03E404	- 0 14E±05	. (4)		. v (a)	< 0.21		T	c 0.23	< 0.22			2.2 > 0	< 0.22 < 0 < 0 < 0	< 0.21	< 0.43		7 < 0.21	I	< 0.22	< 0.23	× 0.21
Dimethyl ohthalate	Ť	1	4	_	v 1.1		T	Ť				T			< 0.21	< 0.43				Ť	< 0.23	< 0.21
Fluoranthene	t	L	-	+	v 1.1	V		ľ	Ĺ						0.21 < 1.7	1 < 0.4		Ī		Ť	< 0.23	< 0.21
Fluorene	2.32E+03 (1	1.00E+04	(2)	Н	< 1.1	0.58	< 0.44				0.26	< 0.43		V).21 < 1.1	< 0.43			0.3	Ė	< 0.23	< 0.21
Hexachlorobenzene	3.33E+00 (1)	1.60E+01	(4)	H	< 1.1			< 0.23		< 0.22	< 0.20 < 0.		< 2.2 < 0).21 <1.			İ	< 0.44	Ť	< 0.23	< 0.21
Hexachlorobutadiene	6.16E+01 (1) 2.69E+02	(2)		< 1.1	V		V				1						Ì		Ť	< 0.23	< 0.21
Hexachlorocyclopentadiene	3.70E+02 (1)	4	(2)	7.52E-01 (8	(8) < 1.1	< 0.21	> 0.44	Ì	< 0.23		< 0.20	< 0.43 < 2.2		< 0.22	< 0.21 < 1.1	< 0.43		7 < 0.21		< 0.22	< 0.23	< 0.21
Indeno(1.2 3-cd)pyrene	L	1) 3.23F±01	(4)	+						<0.22										Ť	< 0.23	× 0 ×
Sophorone	Ť	╀	(4)	+	< 2.9	ĺ			Ī			T			< 0.52 < 2.6	ľ			Ī	ľ	< 0.59	< 0.52
N-Nitrosodi-n-propylamine	6.90E-02 (3) 2.50E+00	┸	+	1.1	V	> 0.44	V			< 0.20 < 0					ľ				ľ	< 0.23	< 0.21
N-Nitrosodiphenylamine	7.94E-03 (1	1.71E-01	(4)	5.54E-06 (8	(8) < 1.1	V			< 0.23	< 0.22				< 0.22 < 0.2).21 < 1.1				1 < 0.44	< 0.22	< 0.23	< 0.21
Naphthalene	4.97E+01 (1) 1.59E+02	(2)	\dashv	< 1.1	2	< 0.44 <		1.5	2	0.88	3			0.26	1 < 0.43			1.3		< 0.23	< 0.21
Nitrobenzene	6.04E+01 (1	2.93E+02	(4)	+	< 2.9	Ť		< 0.57		< 0.55	< 0.50 < 1.1			< 0.56 < 0	< 0.52 < 2.6			Ì	< 1.1	Ì	< 0.59	< 0.52
Penacinopheno	1 74E+03 (1	1) 4.45E+01	(4)	3.42E-02 (6	(8) > 4.0	13 /	A40	Ť	0.00		0.70				021<1	V.0.0	0.56	7	0.86	V 0.43	× 0.47	> 0.42
Phenol	1,83E+04 (1	7.74E+04	(2)	t	< 1.1	< 0.21	Ī	Ī		< 0.22	< 0.20	< 0.43 < 2	< 2.2 < 0		< 0.21 < 1.1	1 < 0.43		7 < 0.21	1 < 0.44	Ť	< 0.23	< 0.21
Pyrene	1.74E+03 (1)	Ĺ	(2)	١	< 1.1	V														Ť	< 0.23	< 0.21
Pyridine	7.80E+01 (2)) 1.00E+03	(6) 1.	.09E-01	(9) < 2.9	< 0.52	1.1	> 0.57	< 0.57		0.50 < 1	.1 < £	V	0.56 < 0	< 0.52 < 2.6	5 < 1.	1 < 1.2		1.1	> 0.56	< 0.59	< 0.52
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg	kg		F	-	57	A CA	047	0 7 7	170	170	49	10	80 / 8	9	10 / 30	0 7 7 3	-	36	44	10 / 3 /	60	0 6 /
Gasoliile Karige Organics (GRO)	Ť	⊥	+		io.	200	Ī	0.1	2	2	74	7	,	0.0	0		ı	22	3	0.0	0.0	0.0
Diesel Range Organics (DRO)	1.00E+03 (11)	1) 3.80E+03	(11)		450	1200	20 <	< 11	310	320	770	120	400 < 11	=	540	120	240	390	630	83	150 < 12	
Motor Oil Range Organics (MRO)	3.00E+03 (12)	s) 5.00E+03	(12)	,	240	540 < 520	> 02	v 299 v	< 56 < 6	< 55 < 74	74	290	750 < 56	> 21	-	270	140	330 < 52		28	86 < 58	< 52
 No screening level or analytical result available NMED - Raik Assessment Guidance for Sile Investigations and Remediation (Dec. 2014) FPA - Regional Screening Levels (April 2009) 	ns and Remediation	(Dec. 2014)																				
(1) NMED Residential Screening Level																						
(z) EPA Residential Screening Levels (April 2009) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007	tiplied by 10 pursual	nt to Provision	/II.B. of the	، July 7, 200	7																	
NMED Order because the constituent is listed as carcinogenic (4) NMED Industrial Occupational Screening Level	genic																					
(5) NMED Construction Worker Screening Level (6) EPA Industrial - Screening Levels (April 2009)																						
(7) EPA Industrial - Screening Levels (April 2009) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007	ied by 10 pursuant t	o Provision VII	B. of the Ju	uly 7, 2007																		
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 11.25	1.25																					
(9) SoilGW Risk-based EPA DAF = 11.25																						
(10) SoilGW MCL-based EPA DAF = 11.25	:																					
(11) NMED Table 6-2 IPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of careening layers	wn oil" with DAF = 1	.u - see report	Section 5 h	or use of																		

screening levels (12) NMED Table 6-2 TPH Soil Screening Levels "Waste Oil" with DAF = 1.0 - see report Section 5 for use of

screening levels (13) arsenic screening level adjusted for site-specific

Table 6	cal Results Summary	ry, Bloomfield, New Mexico
Table	Soil Analytical Re	Bloomfield Refinery, Blo

(18-20.)	1409955-008	< 2.5	< 2.5	94	< 0.10	NA N	09	2.5	2.3	4.6	< 2.5	< 0.25	11	< 0.034	< 0.25		< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.074	< 0.074	< 0.037	10	< 0.074	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	5.2	< 0.074	< 0.37	< 0.37	9.6	< 0.037	0.13	< 0.55	< 0.037	< 0.037	< 0.037	< 0.03/	< 0.37	< 0.037	< 0.037	< 0.074	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037
(8-10,)	1409955-007	:2.7	2.8	140	c0.11	¥	6.9	4.4	4.4	7	< 2.7	c 0.27	23	< 0.039	< 0.27		0.00154	0.00154	c 0.00154	< 0.00154	< 0.00154	c 0.00154	0.00154	0.00154	0.0139	< 0.00154	c 0.00154	0.00154	c 0.00154	< 0.00154	< 0.00154	0.00154	0.00604	< 0.00154	0.0959	c 0.00771	0.0117	c 0.00154	5 0.00154	0.278	0.00169	< 0.00154	< 0.00154	0.00154	0.0156	< 0.00154	< 0.00154	c 0.00154	0.00154	0.00154	< 0.00154	< 0.00154	< 0.00154
('0.5-2.0) r-4r UMWS	1409955-006	< 2.8	3.1	230	< 0.11	NA N	7.5	9	5.3	9.7	< 2.8	< 0.28	25	< 0.036	< 0.27		< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00299	< 0.00149	< 0.00746	< 0.00746	< 0.00299	< 0.00149	< 0.00149	0.0196	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00746	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149	< 0.00149
('8.0-0) 1-41 UMWS	1409955-005	< 2.6	3.8	190	< 0.10	NA.	12	4.8	41	7	< 2.6	< 0.26	26	< 0.037	< 0.25		< 0.00158	× 0.00138	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00315	< 0.00158	< 0.00788	< 0.00788	< 0.00315	< 0.00158	< 0.00158	0.0259	< 0.00158	< 0.00158	< 0.00158	× 0.00158	< 0.00788	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158
('8.0-0) 06-81 UMWS	1410091-001	< 2.9	3.8	200	0.12	AN	10	4.3	7.4	8.7	< 2.9	< 0.29	27	0.17	< 0.25		< 0.00166	< 0.00100	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00 166	< 0.00 166	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00 166	< 0.00166	< 0.00166	< 0.00166	< 0.00331	< 0.00166	< 0.00828	< 0.00828	< 0.00331	< 0.00166	< 0.00166	0.0161	< 0.00166	< 0.00166	< 0.00166	< 0.00 Teb	< 0.00828	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00 166	< 0.00166	< 0.00166	< 0.00166
('6.0-0) es-e1 umws	1410080-003	< 2.8	10	190	0.24	AA A	9.5	3.9	7.3	18	< 2.8	< 0.28	29	< 0.035	< 0.24		< 0.00180	0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	c 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00359	< 0.00180	< 0.00898	< 0.00898	< 0.00359	< 0.00180	c 0.00180	0.0273	< 0.00180	< 0.00180	< 0.00180	0.00180	< 0.00898	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180
(0-0.5')	1410080-002	< 2.7	5.8	250	< 0.11	NA	4	3.3	2.6	5.1	< 2.7	< 0.27	24	> 0.036	< 0.25		< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00457	< 0.00228	< 0.0114	< 0.0114	< 0.00457	< 0.00228	< 0.00228	0.0251	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.0114	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228
('6.0-0) 72-E1 UMWS	1410080-001	< 2.8	22	160	0.14	¥	9.9	3.9	10	16	< 2.8	< 0.28	46	0.25	< 0.27		< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00434	< 0.00217	< 0.0108	< 0.0108	< 0.00434	< 0.00217	< 0.0021/	0.0442	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.0108	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217
SWMU 13-26 (0-0.5')	1410011-004	< 2.6	3	180	< 0.11	ΝΑ	5.5	4.1	4.7	5	< 2.6	< 0.26	21	0.046	< 0.24		< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00340	< 0.00170	0.0303	< 0.00850	< 0.00340	< 0.00170	0/100.0 >	0.0329	< 0.00170	< 0.00170	< 0.00170	< 0.001/U	< 0.00850	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170
(0-0.5') SZ-E1 NMWS	1410011-003	< 2.6	4.3	140	< 0.10	NA N	5.6	3.4	7.5	5.3	< 2.6	< 0.26	18	0.64	< 0.24		< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00479	< 0.00239	< 0.0120	< 0.0120	< 0.00479	< 0.00239	< 0.00239	0.0124	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.0120	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239
(0-0.5')	1410011-002	< 2.8	< 2.8	08	< 0.11	AN.	3.4	2	2.7	2.5	< 2.8	< 0.28	30	990'0	< 0.24		< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00353	< 0.00176	< 0.00881	< 0.00881	< 0.00353	< 0.00176	4 0.00176	0.0173	< 0.00176	< 0.00176	< 0.00176	< 0.001/6	< 0.00284	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176
(9-0-0) 82-81 NMW8	1410011-001	< 2.8	3.1	150	< 0.11	NA.	7.3	3.7	2.8	5.6	< 2.8	< 0.28	21	0.17	< 0.26		< 0.00165	< 0.00103	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00330	< 0.00165	< 0.00825	< 0.00825	< 0.00330	< 0.00165	< 0.00165	0.0123	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00825	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165
(0-0.5')	1410011-007	< 2.7	10	170	0.3	ΝΑ	21	7.2	22	19	< 2.7	< 0.27	37	0.75	< 0.26		< 0.00180	× 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00361	< 0.00180	< 0.00902	< 0.00902	< 0.00361	< 0.00180	0.00000	0.0255	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00271	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180
(0-0.5')	1410011-006	< 2.7	7.5	180	0.46	ΑN	23	7.4	16	029	< 2.7	< 0.27	25.	1,1	< 0.25		< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00335	< 0.00167	< 0.00837	< 0.00837	< 0.00335	< 0.00167	< 0.0016/	< 0.00837	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00837	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167
(0-0.5')	9/29/2014	< 2.8	3.6	160	0.13	ΝΑ	1 12	2 5.4	2.5	14	< 2.8	< 0.28	202	99'0	< 0.23		< 0.00163	< 0.00103	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	0.00298	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	8 < 0.00327	< 0.00163	< 0.00817	< 0.00817	4 < 0.00327	< 0.00163	3 < 0.00163	0.0124	0.0021	< 0.00163	< 0.00163	< 0.00163	< 0.00245	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163
('82-82')	1410522-003	< 2.6	2 < 2.6	0 0 0	< 0.10	< 2.0	-	5.		7	< 2.6	< 0.26		> 0.036	< 0.24		× 0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.21	× 0.21	< 0.10	2.	< 0.21	< 0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.10	4.	< 0.21	× 1.0	< 1.0	7.	< 0.10	0.7	0.1.6	< 0.10	< 0.10	< 0.10	0 0 1 0 V	< 1.0	< 0.10	< 0.10	< 0.21	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
(15-14)	1410522-003	< 2.9	3.	2 21	< 0.12	< 2.0	3	2.8 4.	4.	144	< 2.9	< 0.29	15	< 0.036	< 0.28		< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00365	< 0.00182	< 0.00912	< 0.00912	< 0.00365	< 0.00182	< 0.00182	7 0.00	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00912	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182
('S-2.0) e1-£1 UMWS	1410522-001	< 2.7	< 2.7	50 82		< 2.0	ı		1.8	1.2	< 2.7	< 0.27		< 0.035	< 0.22		< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.001/1	< 0.00171	< 0.00171	< 0.00171	< 0.00171	1 < 0.00342	< 0.00171	< 0.00856	< 0.00856	8 < 0.00342	< 0.00171	- 0.001/1	0.0030	< 0.00171	< 0.00171	< 0.00171	< 0.001/1	< 0.00257	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171
SWMU 13-18 (24-26')	1409B80-005 9/19/2014) < 2.5	(13) < 2.5	10.4	0.10	2	-		0.14	5	< 2.5	< 0.25	(8) 6.4	0.034) < 0.24		(8) < 0.033	× 0.033	> 0.033) < 0.033) < 0.033	990.0 >			(9) < 0.033	990:0 > ((8) < 0.033	× 0.033	< 0.033) < 0.033	< 0.033	(9) < 0.033		990.0 >	> 0.33	(8) < 0.033	1,	> 0.033	. < 0.033	< 0.50	(8) < 0.033) < 0.033	> 0.033	00000	(8) < 0.33	> 0.033) < 0.033	990.0 > (> 0.033	> 0.033	> 0.033	(8) < 0.033	> 0.033
Leachate DAF (11.25) (mg/kg) SailGW			3.20E+00 (1						т	2.73E+02 (8		П	7.10E+02 (8	3.68E-01 (8	2.94E-03 (8		2.02E-02 (8	2.0/E-101 (d	1.25E-03 (8	7.64E-02 (8	1.10E+00 (8			+	-01	П		2.57E+00 (8		П		3.04E+00 (9			1.13E+01 (8	_	1.01E+01 (9	\neg	- 202	_	2.14E-02 (8	т	3.49E-03 (8		2.48E+00 (8	1.87E-02 (8	4.70E-01 (8	6.04E+01 (8	6.14E-03 (8	1.03E-01 (8	1.57E-02 (8	4.24E-03 (8	1.02E+00 (9
Source		(2)	(4)	(2)	(2)	€	(2)	(9)	€ €	(2)	(2)	(2)	(6)	(2)	(2)	ŀ	(4)	(S) (A)	(2)	(4)	(2)		. (7)	т	(9)	(4)	(4)	(2)	(2)	Т	H	9 9	6	1	(2)	(c)	(9)	(9)	. (2)	(5)	(4)	(9)	()	()	(2)	(4)	(2)	(2)	€ €	(2)	(2)	(4)	(9)
Non- Residential Soil Screening			(1) 2.15E+01			Ļ	(1) 1.34E+02	Ц	4	┸	(1) 1.75E+03	Ц	(1) 6.14E+02	(1) 2.07E+01	Ш	L	(1) 1.37E+02	┸	┸	Ш			1 24 E 100	┸	┸	Ц	(1) 3.31E+00	(1) 2.50E+	_	┺	Ц	(2) 2.00E+04 (1) 1.59E+02	Ш	4	(1) 9.17E+04	┸	(2) 4.10E+03	Ц	- 0 00 0	(1) 2.42E+05	(1) 8.72E+01	Ц	4	4	(1) 1.62E+03	L	Ц	(1) 1.66E+04	4	(1) Z.01E-	┸	(1) 6.74E+01	4
Residential Soil Screening Level			4.25E+00	Ť	Ť	T	T	П	T	T	П	П	3.94E+02	Т	П	Ī	2.81E+01	Ť	T	П	T		F 10E 00	T	t	П	6.72E-01	T	Т	T	П	1.60E+03	П	T	3.74E+04	T	3.10E+02	T	Ť	Т	Г	П	T	T	1.55E+03	T	H	1	†	Ť	t	1.39E+01	7
Analytes		ng/kg)				 	omium		ead	yı redu			L			olatile Organic Compounds - (EPA Method 8260) mg/kg	Tetrachloroethane	atrachloroethana	2-Trichloroethane	proethane	-Dichloroethene	-Dichloropropene	3- Inchlorobenzene	4-Trichlorobenzene	,4-Trimethylbenzene	Dibromo-3-chloropropane	Dibromoethane (EDB)	-Dichlorobenzene	Dichloronopane	nethylbenzene	chlorobenzene	3-Dichloropropane	aphthalene	propropane	-Butanone (MEK)	Columnia	let hy inapht hallene	oluene	-isopropyitoliuene Method 3 contracted frontial isobutud between	z-pendinone (memynsoouty) ketone)		nzene	romodichloromethane	TIII African	mometrane ton disulfide	etrachloride	oroberizene	nane (ethyl chloride)	E H	DOUITERIAINE	chloropropene	Dibromochloromethane	nethane
		Metals (mg/kg) Antimony	Arsenic	Barium	Cadmium	Chromiun	Total Chromium	Cobalt	Lead	Nickel	Selenium	Silver	Vanadium	Mercury	Cyanide	Volatile (1,1,2-Te	1 1 2 2 T.	1.1.2-Tric	1,1-Dichk	1,1-Dichk	1,1-Dichk	1,2,3-1 IIC	1.2.4-Tric	1,2,4-Trin	1,2-Dibro	1,2-Dibro	1,2-Dichle	1.2-Dichlo	1,3,5-Trin	1,3-Dichk	1,3-Dichle	1-Methyli	2,2-Dichk	2-Butano	2-Hexano	2-Methylr	4-Chlorotoluene	4-Isoprof	Acetone	Benzene	Bromobenzene	Bromodic	Bromororm	Carbon di	Carbon te	Chlorobe	Chloroett	Chlorofor	cis-1.2-Du	cis-1,3-Di	Dibromoc	Dibromor

Table 6	Soil Analytical Results Summary	Bloomfield Refinery, Bloomfield, New Mexico	

SWMU 14-1 (18-20')	1409955-008	9/17/2014	< 0.037	1.4	0.34	< 0.037	< 0.11	1.2	1.5	3.5	0.35	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	× 0.037	< 0.037	< 0.037	< 0.074		< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.41	< 0.31	< 0.52	< 0.52	< 0.52	< 0.26	< 0.21	4.1	< 0.52	< 0.21	< 0.21	< 0.26	< 0.21	< 0.52	< 0.21	< 0.52	< 0.21	< 0.41	< 0.26	< 0.27	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.21	< 0.21	< 0.21
(%1-8) 1-41 NMWS	1409955-007	9/17/2014	0.00154	0.000	0.00154	: 0.00154	: 0.00154	: 0.00154	0.00294	0.0108	: 0.00154	: 0.00154	: 0.00154	0.00154	0.00154	0.00154	0.00154	0.00154	0.00154	0.00428		: 0.23	: 0.23	: 0.23	0.23	0.23	0.23	0.45	: 0.34	: 0.56	: 0.56	: 0.56	: 0.28	: 0.23	: 0.23	: 0.56	0.23	: 0.23	: 0.28	: 0.23	0.56	0.23	0.56	: 0.23	: 0.45	0.28	0.23	0.23	: 0.23	: 0.23	: 0.23	: 0.23	0.23	0.23	0.55	: 0.23	: 0.23	: 0.23	: 0.23
('0.S-č.0) r-4r UMWS	1409955-006	9/17/2014	0.00149	0.00149	0.00149	> 0.00149	0.00149	- 0.00149	0.00149	0.00149	0.00149	0.00149	0.00149	0.00149	0.00149	0.00149	0.00149	0.00149	> 0.00149	< 0.00149		0.22	. 0.22	0.22	0.22	0.22	0.00	0.45	0.34	0.56	0.56	0.56	.0.28	0.22	0.22	0.56	0.22	0.22	0.28	.0.22	0.56	0.22	0.56	0.22	. 0.45	0.28	27.0	0.22	0.22	0.22	0.22	0.22	0.22	27.0	0.56	0.22	0.22	0.22	0.22
('6.0-0) 1-41 UMWS	1409955-005	9/17/2014	< 0.00158	× 0.00156	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	< 0.00158	0.00216	< 0.00158	000000	< 0.00158	< 0.00158	< 0.00158		< 0.21	< 0.21	< 0.21	< 0.21	> 0.2	40.21	< 0.43	< 0.32	< 0.54	< 0.54	< 0.54	< 0.27	< 0.21	< 0.21	< 0.54	< 0.21	< 0.21	< 0.27	< 0.21	× 0.54	< 0.27 < 0.54	< 0.54	< 0.21	< 0.43	< 0.27	× 0.27	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	× 0.21	< 0.21	< 0.21	< 0.21	< 0.21
('8.0-0) 06-E1 UMWS	1410091-001	9/30/2014	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00166	< 0.00 166	0.00100	< 0.00 166	< 0.00166	< 0.00166		< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.45	< 0.34	< 0.56	< 0.56	< 0.56	< 0.28	< 0.22	< 0.22	< 0.56	< 0.22	< 0.22	< 0.28	< 0.22	< 0.56	< 0.22	< 0.56	< 0.22	< 0.45	< 0.28	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22 < 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22
(76.0-0) 62-81 UMWS	1410080-003	9/30/2014	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	000000	< 0.00180	< 0.00180	< 0.00180		<1.1	<1.1	v1.1	1.1			<22	<1.7	< 2.8	< 2.8	< 2.8	< 1.4	<1.1	< 1.1	< 2.8		<1.1	<1.4	<1.1	< 2.8	< 2.8	< 2.8	<1.1	< 2.2	< 1.4	1.1		<1.1	< 1.1	< 1.1	×1.1	×1.1	-11	< 2.8	<1.1	<1.1	<1.1	<1.1
(0-0.5')	1410080-002	9/30/2014	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	< 0.00228	× 0.00220	< 0.00228	< 0.00228	< 0.00228		< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.43	< 0.33	< 0.54	< 0.54	< 0.54	< 0.27	< 0.22	< 0.22	< 0.54	< 0.22	< 0.22	< 0.27	< 0.22	< 0.54	< 0.22	< 0.54	< 0.22	< 0.43	< 0.27	< 0.22 < 0.33	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	× 0.22	> 0.22	< 0.22	< 0.22	< 0.22	< 0.22
('6.0-0) TS-E1 UMWS	1410080-001	9/30/2014	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	0.00217	< 0.00217	< 0.00217	< 0.00217		< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	523	< 4.5	< 3.4	< 5.6	< 5.6	< 5.6	< 2.8	< 2.3	< 2.3	< 5.6	< 2.3	< 2.3	< 2.8	< 2.3	< 5.6	< 2.3	< 5.6	< 2.3	< 4.5	< 2.8	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3 < 2.3	< 5.6	< 2.3	< 2.3	< 2.3	< 2.3
SWMU 13-26 (0-0.5')	1410011-004	9/29/2014	0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	< 0.00170	0/1001/0	0.00010	< 0.00170	< 0.00170	< 0.00170		< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	× 0.43	< 0.85	< 0.64	4.1.1	< 1.1	< 1.1	< 0.53	< 0.43	< 0.43	< 1.1	< 0.43	< 0.43	< 0.53	< 0.43	< 1.1	< 0.43	< 1.1	< 0.43	< 0.85	< 0.53	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	× 0.45	< 0.43	< 0.43	< 0.43	< 0.43
SWMU 13-25 (0-0.5')	1410011-003	9/29/2014	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239	< 0.00239		< 2.1	< 2.1	< 2.1	< 2.1	< 2.1	< 2.1	< 4.2	< 3.2	< 5.3	< 5.3	< 5.3	< 2.7	< 2.1	< 2.1	< 5.3	< 2.1	< 2.1	< 2.7	< 2.1	< 5.3	< 5.3	< 5.3	< 2.1	< 4.2	< 2.7	< 2.1	< 2.1	< 2.1	< 2.1	< 2.1	< 2.1	< 2.1	< 2.1	< 53	< 2.1	< 2.1	< 2.1	< 2.1
SWMU 13-24 (0-0.5')	1410011-002	9/29/2014	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	< 0.00176	0.000170	< 0.00176	< 0.00176	< 0.00176		< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.44	< 0.33	< 0.55	< 0.55	< 0.55	< 0.27	< 0.22	< 0.22	< 0.55	< 0.22	< 0.22	< 0.27	< 0.22	< 0.55	< 0.22	< 0.55	< 0.22	< 0.44	< 0.27	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.55	< 0.22	< 0.22	< 0.22	< 0.22
SWMU 13-23 (0-0.5')	1410011-001	9/29/2014	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	< 0.00165	× 0.00103	< 0.00165	< 0.00165	< 0.00165		< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	× 0.89	< 0.67	< 1.1	< 1.1	< 1.1	< 0.56	< 0.45	< 0.45	< 1.1	< 0.45	< 0.45	< 0.56	< 0.45	< 1.1	< 0.45	< 1.1	< 0.45	< 0.89	< 0.56	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 1.1	< 0.45	< 0.45	< 0.45	< 0.45
SWMU 13-22 (0-0.5')	1410011-007	9/29/2014	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	< 0.00180	000000	< 0.00180	< 0.00180	< 0.00180		< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.45	< 0.34	< 0.57	< 0.57	< 0.57	< 0.28	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.28	< 0.23	< 0.57	< 0.23	< 0.57	< 0.23	< 0.45	< 0.28	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.23	< 0.23
(0-0.5')	1410011-006	9/29/2014	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167	< 0.00167		< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.44	< 0.33	< 0.55	< 0.55	< 0.55	< 0.27	< 0.22	< 0.22	< 0.55	< 0.22	< 0.22	< 0.27	< 0.22	< 0.55	< 0.22	< 0.55	< 0.22	< 0.44	< 0.27	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.55	< 0.22	< 0.22	< 0.22	< 0.22
SWMU 13-20 (0-0.5')	1410011-005	9/29/2014	< 0.00163	0.00179	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	< 0.00163	0.0106	< 0.00163	< 0.00103	< 0.00163	< 0.00163	0.0108		< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.45	< 0.34	< 0.56	< 0.56	< 0.56	< 0.28	< 0.23	< 0.23	< 0.56	< 0.23	< 0.23	< 0.28	< 0.23	< 0.56	< 0.23	< 0.56	< 0.23	< 0.45	< 0.28	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.55	< 0.23	< 0.23	< 0.23	< 0.23
('85-82') 81-81 NMWS	1410522-003	10/8/2014	0.10	0.10	2.0	< 0.10	< 0.31	0.41	0.44	1.4	0.38	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.00	< 0.10	< 0.10	< 0.21		< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	× 0.21	< 0.21	< 0.31	< 0.52	< 0.52	< 0.52	< 0.26	< 0.21	2.3	< 0.52	< 0.21	< 0.21	< 0.26	< 0.21	< 0.52	< 0.21	< 0.52	< 0.21	< 0.41	< 0.26	< 0.21 < 0.24	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.21	< 0.21	< 0.21
(12-14')	1410522-002	10/8/2014	< 0.00182	< 0.00162	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	< 0.00182	0.00102	< 0.00182	< 0.00182	< 0.00182		< 0.46	< 0.46	< 0.46	< 0.46	< 0.40	c 0.46	< 0.92	< 0.69	< 1.2	< 1.2	< 1.2	< 0.58	< 0.46	< 0.46	< 1.2	< 0.40	< 0.46	< 0.58	< 0.46	< 1.2	< 0.40	< 1.2	< 0.46	< 0.92	> 0.58	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 1.2	< 0.46	< 0.46	< 0.46	< 0.46
('S-8.0) et-£t UMW8	1410522-001	10/8/2014	× 0.001/1	< 0.0017	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	< 0.00171	0.0017	< 0.00171	< 0.00171	< 0.00171		< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.33	< 0.55	< 0.55	< 0.55	< 0.27	< 0.22	< 0.22	< 0.55	< 0.22	< 0.22	< 0.27	< 0.22	< 0.55	< 0.22	< 0.55	< 0.22	< 0.44	< 0.27	< 0.22 < 0.32	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	27.0 >	< 0.55	< 0.22	< 0.22	< 0.22	< 0.22
SWWN 13-18 (24-26')	0	9/19/2014	5 0.033	2000	< 0.033	< 0.033	660.0 >	660:0 >	< 0.033	0.26	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	× 0.033	0.000	< 0.033	< 0.033	990.0 >		< 0.21	< 0.21	< 0.21	< 0.21	< 0.0	4 0 21	< 0.41	< 0.31	< 0.51	< 0.51	< 0.51	< 0.26	< 0.21	66'0	< 0.51	< 0.21	< 0.21	< 0.26	< 0.21	< 0.51	< 0.21	< 0.51	< 0.21	< 0.41	< 0.26	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	0.21	< 0.51	< 0.21	< 0.21	< 0.21	< 0.21
Leachate DAF (11.25) Gring/kg) SoilGW) 2.65E-01 (8)			4.63E-02 (8)		1.16E+01 (8)				2.64E-01 (8)				1.68E+00 (8)		9.92E-02 (8)	\neg		4.05E-02 (8)	_	-	-	-	-	2.76E-02 (8)	-	_	6.48E-01 (8)	_	2.25E+01 (9)	\neg	2.14E+00 (9)	6.90E-02 (8)		2.22E-02 (8)		1.35E-03 (9)		1.13E-02 (9)		4.64E+01 (8)	3.83E-02 (9)	4.79E+02 (8)	-	$\overline{}$	3.40E-01 (8)	3.47E+00 (8)	3 40E±01	3.40E+01 (8)	4.73E+01 (9)	2.59E-01 (9)	3.40E-04 (8)	2.66E-02 (8)
Source		ŀ	0 3	ŧ !	9 9	4	(6	Ë	-	(2)		П	-	(2)	(2)	(6)	(c) (s)	(2)	(4)	(2)		(5)	(2)	. :	(4)	(2)	(2)	(2)	(2)	(2)	(4)	(4)	(2)	(2)	(9)	(9)	(a)	(9)	(4)	•	(2)		(7)	П	02 (7)	. į	(9)	. (2)	(2)	(7)	(4)	(4)	(- (4)	(4)	(9)	(9)	(2)	(4)
Non- Residential Soil Screening		L	ш	ш	L	L	(1) 1.21E+03			(1) 1.59E+02		1) 1.02E+04		1) 1.20E+02		(1) 3.05E+0Z	┸	Ш	L	L	1	Ц	(1) 2.50E+03	┙	(1) 1.59E+02	1	L	(1) 8.07F+4	L	L	Ш	Ш	Ц	(1) 1.77E+03	4	3.10E+04	4		(1) 5.70E+01		(1) 2.15E+01		(3) 8.60E+01		(3) 8.60E+02		┸	(3) 3.00F+03	┸	Ц	Ц	(1) 3.23E+t	ᆚ	- 3 23E-1	2) 3.23E+02	┸	(2) 1.80E+4	Ш	(1) 5.19E+
Residential Soil Screening Level		Г	Т	Т	Т	Γ	4.09E+02	Г		4.97E+01	٦	7.26E+03	7	Т	Т	2.95E+02	Τ	Т	Т	Г	1	8.29E+01	1	1	T	T	Т	Т	T	T	П	П	П	3.91E+02	1	T	Ť	Т	1.18E+01	П	4.93E+00		2.40E+00		2.40E+01		Ť	8.50F+01	T	П	П	T	T	Ť	2 40F+05	T	T	П	П
Ansives		100	Iorodifluorometriane	nzene	(henzene (cilmene)	ert-butyl ether (MTBE)	Methylene chloride	Butylbenzene	-Propylbenzene	lene	Butylbenzene		ert-Butylbenzene	rachloroethene (PCE)	L	ans-1,Z-DUE	3-Dichophopene	Detrette (TCE)	chloride	Total	emi Volatile Organics - (EPA Method 8270) mg/kg	chlorobenzene	Dichlorobenzene	Dichlorobenzene	4-Dichlorobenzene	I-iwetnylitapitrialene 2.4 f. Trichloronhenol	photophenol	Dichlorophenol	thylphenol	rophenol	4-Dinitrotoluene	,6-Dinitrotoluene	naphthalene	phenol	Methylnaphthalene	Vethylphenol	Nitrophenol	r4-Methylphenol	Norobenzidine	iline	Dinitro-2-methylphenol	mopnenyl pnenyl etner	loroaniine	lorophenyl phenyl ether	iline	Nitrophenol	cenaphthene	uylene	thracene	zobenzene	anthracene	pyrene	zo(b)fluoranthene	inzo(g,n,i)perylene	120(K)iluolanulerie	-	-chloroethoxy)methane	(2-chloroethyl)ether	3is(2-chloroisopropyl)ether

Table 6 Soil Analytical Results Summary Bloomfield Refinery, Bloomfield, New Mexico

Part Part			e e	€		13-18 (24-26')	('S-3.0) er-er u	13-19 (26-28')	13-20 (0-0.5')	('8.0-0) ts-£t U	13-22 (0-0.5')	13-23 (0-0.5')	13-24 (0-0.5')	13-25 (0-0.5')	13-26 (0-0.5')	13-28 (0-0.5')	('8.0-0) 83-21	13-30 (0-0.5')	(,5 [,] 0-0) ۱-†۱ N	(0.5-2.0)	(.01-8) r-4r UI	U 14-1 (18-20')
State Control Contro	Analytes	Residential Soil Screening Level	Soil Scree	Source	Source				NWWS	NWWS	nwws	nwws	NWS				nwws	nwws	WMS	NWS	WMS	
1985/00 01 1985					140	-	÷	102 1410522 4 10/8/20	-003	1410011-006	1410011-007	_	_	—			-	\vdash	1409955-0	-	9	-
	Bis(2-ethy/hexyl)phthalate	L	Ĺ	(4)	(8)		v	v	٧	< 0.55	< 0.57	v	v		< 5.6	-	< 2.8	П	< 0.54	v	V	< 0.52
Cutting Cutt	Butyl benzyl phthalate		Ц	(7)	(6)		V		< 0.23	< 0.22						< 0.22	× 1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
1 1 1 1 1 1 1 1 1 1	Carbazole		4	•		V	V		< 0.23	< 0.22						< 0.22	1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
	Chrysene	_	4	(4)	(8)		v	1	< 0.23	< 0.22						< 0.22	v 1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
1985 1985	Di-n-butyl phthalate	1	4	(2)	(8)		V	1	< 0.56	< 0.55	Ť				1	< 0.54	< 2.8	< 0.56	< 0.54	< 0.56	< 0.56	< 0.52
1 1 1 1 1 1 1 1 1 1	Directyl phthalate	1 100 04	1 0 0 0 0	- (4)	1 (0)		V	1	< 0.45	× 0.44	Ī				Ī	× 0.43	< 2.2	< 0.45	× 0.43	0.45	< 0.45	< 0.41
String 10 28600 10 28	Dibenzofinan	1.33E-U	(1) 3.23E+	ŧ)	(8)		/ V		< 0.23	< 0.22	Ť					< 0.22		< 0.22	× 0.21	< 0.22	× 0.23	< 0.21
2011-01-01 1012-01-01 101	Diethyl phthalate	4.93E+04	L	(2)	(8)		V		< 0.23	< 0.22					T	< 0.22	v 1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
Statistic Control Co	Dimethyl phthalate	6.11E+05	(1) 2.38E+t	(2)	(8)		V		< 0.23	< 0.22						< 0.22	× 1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
State Color Colo	Fluoranthene	2.32E+03	(1) 1.00E+t	(2)	(8)		V		< 0.23	< 0.22					П	< 0.22	< 1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
State Color Colo	Fluorene	2.32E+03	(1) 1.00E+	(2)	(8)		V		0.38 < 0.23	< 0.22						< 0.22	× 1.1	< 0.22	< 0.21	< 0.22	< 0.23	0.27
Street Color Col	Hexachlorobenzene	3.33E+00	(1) 1.60E+	(4)	(8)		v '	ı	< 0.23	< 0.22					1	< 0.22	1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
Strict S	Hexachlorobutaglene	9 70E+01	(1) 2.69E+	(2)	(8)	Ī	v \		< 0.23	× 0.22					Ī	< 0.22	- \ - - +	× 0.22	× 0.21	< 0.22	< 0.23	< 0.21
1555-00 1 1 1 1 1 1 1 1 1	Hexacilonethane	4.31E+01	┸	(2)	(0)		/ V	Ì	< 0.23	< 0.22	Ī				T	< 0.22	, v	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
Source 10 Source 10	Indeno(1,2,3-cd)pyrene	1.53E+00	(1) 3.23E+t	(4)	(8)		V		< 0.23	< 0.22						< 0.22	1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
8 986-03 (1) 2 196-04 (1) 196-04	Isophorone	5.61E+03	(1) 2.70E+t	(4)	(8)		V		< 0.56	< 0.55				_		< 0.54	< 2.8	< 0.56	< 0.54	< 0.56	< 0.56	< 0.52
7-84-620 11 17-15-621 10 17-15-621 17-15-621 10 17-15-621 10 17-15-621 10 17-15-621 17-15-621 10 17-15-621 10 17-15-621 10 17-15-621 10	N-Nitrosodi-n-propylamine	6.90E-02	(3) 2.50E+c	(7) 1.24E-	(6)	v	V		< 0.23	< 0.22		П				< 0.22	< 1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
State of the control of the contro	N-Nitrosodiphenylamine	7.94E-03	(1) 1.71E-t	(4)	(8)		V	ĺ	< 0.23	< 0.22					1	< 0.22	1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
Substitution 1, 2, 2, 2, 2, 3, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4,	Naprithalene	4.97E+01	(1) 1.59E+	(2)	(8)		v ,	Ī	0.55 < 0.23	< 0.22					Ī	< 0.22	1.1	< 0.22	< 0.21	< 0.22	< 0.23	1.5
1.58F-60 17. 7.5F-60 10 2.58F-61 10 0.22 0.6	Pentachombanol	9.04E+00	(1) 2.93E+	(4)	(9)		/ V		< 0.36	< 0.33	Ť					× 0.34	× 2.0	< 0.30	< 0.34 < 0.43	< 0.36	< 0.30	< 0.41
17846-04 10 17866-04 17866-04 10 1	Phenarthrene	1.74E+03	(1) 7.53E+t	(2)	(8)		V		0.66 < 0.23	< 0.22	ľ					< 0.22	1.1	< 0.22	< 0.21	< 0.22	< 0.23	0.73
1784-03 11 1785-03 10 1086-04 1086-04 10 1086-04 10 1086-04 10 1086-04 10 1086-04 10 1086-04 10 1086-04 10 1086-04 10 1086-04	Phenol	1.83E+04	(1) 7.74E+t	(2)	(8)		V		< 0.23	< 0.22				_		< 0.22	1.1 >	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
100E-03 (3) 100E-03 (4) (5) 100E-03 (6) (5)	Pyrene	1.74E+03	(1) 7.53E+	(2)	(8)	1	V	П	< 0.23	< 0.22	П	П	П	1	П	< 0.22	1.1	< 0.22	< 0.21	< 0.22	< 0.23	< 0.21
100E-03 (11) 3.00E-03 (11)	Pyridine	-	(2) 1.00E+	03 (6) 1.09E-	_	_	V	< 0.52	< 0.56	< 0.55	< 0.57	1.1 < 0		3 < 1.1	< 5.6	< 0.54	< 2.8	< 0.56	< 0.54	< 0.56	< 0.56	< 0.52
100E+03 (11) 380E+03 (12) -	Total Petroleum Hydrocarbons - (EPA Method 8015B) mg. Gasoline Range Organics (GRO)	/kg	-		-	11 < 3.5	V	-	110 < 2.7	<32						6 E V	< 4.1	< 2.7	< 3.5	< 3.7	<3.4	36
1,000-100 101 2,000-100 101	Control of the contro	Ť	上	T		1004			77			27	ç	67		7		7	7	-		E47
3.00E-d3 (12) 5.00E-d3 5.00E-	Diesel range O'gailles (DAO)	1		T		3						5		5		2		-	,	,	,	
NMED Season and standard by the season and stand	Motor Oil Range Organics (MRO)		_	1	o V		$\frac{1}{2}$	140 < 560	< 55	< 55	< 57	140 < 5	4	62 < 53	$\frac{1}{2}$	470 < 53	v 26	< 55	× 52	v 20	< 57	< 52
(1) MMED Residential Screening Level (2) EAP Residential Screening Level (3) EAP Residential Screening Level (3) EAP Residential Screening Level (3) EAP Residential Screening Level (4) EAP Residential Screening Level (4) EAP Residential Screening Level (4) EAP Residential Screening Level (4) EAP Residential Screening Level (4) EAP EAP EAP EAP EAP EAP EAP EAP EAP EAP	NMED - Risk Assessment Guidance for Site Investigation EPA - Regional Screening Levels (April 2009)	ons and Remediativ	on (Dec. 2014 _.	_																		
(S. PCA Recidential - Screening a version of the July 7, 2007 (A) MED Charterial a Screening as exercingenic (S) Make Do charterial by the pursuant to Provision VII.B. of the July 7, 2007 (A) MED Charterial cover of the season of the July 7, 2007 (B) Make Do charterial cover of the July 7, 2007 (B) Make Do charterial cover of the July 7, 2007 (C) EAP Industrial - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (A) EAP Industrial - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (B) Solicial Richard - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (B) Solicial Richard - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (B) Solicial Richard - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (B) Solicial Richard - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (B) Solicial Richard - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (B) Solicial Richard - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (B) Solicial Richard - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (B) Solicial Richard - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (B) Solicial Richard - Screening Levels (A) 2009 (Multiple day 10 pursuant to Provision VII.B. of the July 7, 2007 (B) Solicial Richard - Screening Levels (A) 2009 (Multiple day	(1) NMED Sessionarial Screening Level																					
NMED Ordre because the constituent is listed as carcinogenic (4) MIRIO profused so acroinogenic (5) MIRIO profused some state of the constituent o	(2) EPA Residential Screening Level (3) EPA Residential - Screening Levels (April 2009) mult	Itiplied by 10 pursu	ant to Provisic	of the July	7, 2007																	
(a) WinCo notation own because a comparing Level (b) Mark Construction own because of the Louy 7, 2007 (b) EA husbrial - Screening Levels (a) Construction own because the Louy 2, 2007 (c) EA husbrial - Screening Levels (a) Construction of the Louy 2, 2007 (c) EA husbrial - Screening Levels (a) Construction of the Louy 2, 2007 (c) EA husbrial - Screening Levels (a) Construction of the Louy 2, 2007 (c) Solicion WinCo Tour Construction of the Louy 2, 2007 (d) Solicion WinCo Tour Construction of the Louy 3, 2007 (d) Solicion WinCo Tour Construction of the Louy 3, 2007 (d) Solicion WinCo Tour Construction of the Louis Construction of the L	NMED Order because the constituent is listed as carcino	ogenic																				
(FigNa distribution beauty (April 2009) will provision VII.B. of the July 7, 2007 (FigNa distribution beauty (April 2009) will provision VII.B. of the July 7, 2007 (FigNa distribution beauty (April 2009) will be a cardioration beauty (April	(4) NMED Industrial Occupational Screening Level (5) NMED Construction Worker Screening Level																					
(NE) Por Another seed seed (April 2009 and Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another Seed (April 2004 And Another 2004 And Another Seed (April 2004 And Another	(6) EPA Industrial - Screening Levels (April 2009)	:	:																			
(8) SolGW WMED Dution Attenuation Factor (DAP) = 11.25 (9) SolGW WALCh 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10) SolGW WALCH 28sed EPA DAF = 11.25 (10	(7) EPA Industrial - Screening Levels (April 2009) multip NMED Order because the constituent is listed as carcino	blied by 10 pursuar	it to Provision	VII.B. of the July 7	, 2007																	
(a) SIGIGN Withbreaded PA DAF = 11.25 (10) Solidy With Labered EPA DAF = 11.25 (10) Solidy With Character of the Company of th	(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 1	11.25																				
(10) Solidy MXL-based EPA DAF = 11.25 (10) Solidy MXL-based EPA DAF = 11.25 (10) Solidy MXL-based EPA DAF = 11.25 (10) Solidy MXL-based EPA DAF = 11.25 (10) Solidy MXL-based EPA DAF = 11.25 (11) Solidy MXL-based EPA DAF = 11.25 (11) Solidy MXL-based EPA DAF = 11.25 (12) Solidy MXL-based EPA DAF = 11.25 (13) Solidy MXL-based EPA DAF = 11.25 (14) Solidy MXL-based EPA DAF = 11.25 (15) Solidy MXL-based EPA DAF = 11.25 (15) Solidy MXL-based EPA DAF = 11.25 (16) Solidy MXL-based EPA DAF = 11.25 (17) Solidy MXL-based EPA DAF = 11.25 (17) Solidy MXL-based EPA DAF = 11.25 (18) Solidy MXL-based EPA DAF = 11.25 (18) Solidy MXL-based EPA DAF = 11.25 (19) Solidy MXL-based EPA DAF = 11.25 (19) Solidy MXL-based EPA DAF = 11.25 (19) Solidy MXL-based EPA DAF = 11.25 (10) Solidy MXL-based EPA DAF =	(9) SoilGW Risk-based EPA DAF = 11.25																					
and the company of the second	(10) SoilGW MCL-based EPA DAF = 11.25			:																		
	(11) NMED Table 6-2 IPH Soil Screening Levels "ukno	own oil" with DAF =	1.0 - see rep	ort Section 5 for us	e ot																	

screening levels (12) NMED Table 6-2 TPH Soil Screening Levels "Waste Oil" with DAF = 1.0 - see report Section 5 for use of

screening levels
(13) arsenic screening level adjusted for site-specific

	1201	c u	22.0			<0.20	¥			×.		د2.0	:0.50		0000	0.3		:0.050	د0.050	c0.050	0.030	0.050	:0.10	<0.10	c0.10	090.05	:0.10	:0.050	<0.050	0.050	:0.050	د0.050	40.050	:0.20	د0.10	:0.50	<0.050	:0.20	<0.050	0.050	0.50	0.050	:0.050	c0.050	<0.050	-0.40 -0.50	:0.10	<0.050	<0.10	.0 15	:0.050	:0.050	<0.050	<0.10
('2.8-2.7) 1-E UMW2	1/30/2012	0 4/	5.0	150	0.47	<0.20	Ψ, i	7.4	3.4	Y	5.8	-5.0	0.50	20	6600	0.3		> 60000.0	> 6000.0	00000	0.0009	> 6000	> 60000.0	> 60000'0	60000	90000	> 60000	> 60000:0	0.0009	00000	0.0009	> 60000.0	0.0009	0.0039	> 60000:0	600000	0.0009	> 60000	× 6000 °c	600000	0.0009	0.0009	> 60000'0:	60000	* 60000	0.0000	> 60000.0	> 60000'0	00000	90000	0.0009	> 60000'0	× 60000°c	6000000
('2.4-2.5) 1-5 UMWS	1/30/2012	0 47	V V	150	0.49	<0.20	Z V V	7.5	3.3	Z V	9.9	<5.0	<0.50	21	6600	40.3 40.3		<0.001	<0.001	<0.001	20.001	<0.001	<0.001	<0.001	<0.001	40.001	<0.001	<0.001	<0.001	50.001 S S S	<0.001	<0.001	0.001	<0.004	<0.001	<0.001	<0.001 <0.001	<0.004	<0.001	40.001	40.001	<0.003 <0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001 <0.001	<0.001	<0.001	<0.001	<0.001
(97-97) C-#1 OMMS	9/17/2014	2.2	2.7	150	0.16	< 0.11	4	80 %	3.4	2	2.3	2.7	0.27	15	2000	0.23		0.61	0.61	0.61	0.0	0.61	1.2	1.2	1.2	170	1.2	0.61	0.61	0.61	51	0.61	0.61	26	1.2	6.1	< 6.1	51	0.61	3.4	0.0	9.2	< 0.61	0.61	0.61	6.1	0.61	0.61	1.2	1.8	0.61	0.61	0.61	0.61
SWMU 14-5 (16-18')	9/17/2014	867	2.8	130	0.43	> 1110	Y Y	72	3.8	×	5.8	2.8	> 0.28	20	3000	0.25		> 0.16	0.16	> 0.16	0.16	0.16	0.32	0.32	0.32	0.16	> 0.32	> 0.16	0.16	0.16	1.3	> 0.16	0.16	1.3	0.32	1.6	0.10	2.4	> 0.16	0.16	0.0	1.8	> 0.16	0.16	0.16	1.6	> 0.16	> 0.16	0.32	0.16	0.16	> 0.16	0.16	0.16
('0.5-2.0') 8-41 UMW8	9/17/2014	80/		100	0.41	0.11	Ψ.	6.0	3.5	4	5.7	2.8	> 0.28	18	2000	< 0.26		0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131	0.00261	0.00131	0.0135	0.00653	0.00261	0.00131	0.00131	0.00033	0.00131	0.00131	0.00131	0.00131	0.00653	0.00131	0.00131	0.00131	0.00131	0.00131	0.00131 <	0.00131 <	0.00131
(.5.0-0) 5-41 UMWS	9/17/2014	767	7	26	0.36	< 0.11	Z L	0	3.4	¥	5	< 2.7	< 0.27	16	7000	< 0.26		< 0.00135	< 0.00135	< 0.00135	0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135 ×	< 0.00135	< 0.00135 <	< 0.00135	< 0.00135	< 0.00135	< 0.00135 <	< 0.00135 <	< 0.00270	< 0.00135 <	< 0.00676	< 0.00676	< 0.00270	< 0.00135 <	< 0.00135	0.0000	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00676	< 0.00135	< 0.00135	< 0.00135	< 0.00135 < 0.00135	< 0.00135	< 0.00135	< 0.00135 <	< 0.00135
SWMU 14-4 (18-20.)	1409B79-002 9/18/2014	0 / /		290	< 0.30	< 0.20	¥.	1.1	3.4	S	2.3	< 4.9	< 0.49	21	0000	< 0.24		< 0.034	< 0.034	× 0.034	× 0.034	× 0.034	990'0 >	· 0.068	× 0.068	× 0.034	> 0.068	< 0.034	< 0.034	× 0.034	< 0.034	< 0.034	× 0.034	0.81	< 0.068	× 0.34	< 0.34 ·	1.4	< 0.034	× 0.034	× 0.34	< 0.034	< 0.034	× 0.034	< 0.034	v 0.34	< 0.034	< 0.034	< 0.068	× 0.034	< 0.034	< 0.034	< 0.034	× 0.034
SWWN 14-4 (e-8.)	1409B79-001 9/18/2014	24		160	0.78	< 0.22	NA S	01	6.3	NA N	10	< 5.6	< 0.56	31	3000	< 0.26		< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00387	< 0.00194	0.0243	< 0.00968	< 0.00387	< 0.00194	< 0.00194	0.00908	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00290	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194
'0.5-2.0 14-4 UMWS	1409812-002 9/15/2014	967	3.2	170	0.49	< 0.11	NA		4.0	P V	7.6	< 2.6	< 0.26	23	3000	× 0.28		< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00255	< 0.00128	< 0.00638	< 0.00638	< 0.00255	< 0.00128	< 0.00128	< 0.00038 0.00034	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00638	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128
0.0 0 + +1 0.011	1409812-001 9/15/2014	90 /	3.9	160	0.53	< 0.11	NA	10	7.4	NA	7.7	< 2.6	< 0.26	24	30	< 0.26		< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00246	< 0.00123	< 0.00614	< 0.00614	< 0.00246	< 0.00123	< 0.00123	< 0.00014	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00614	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123
	1409812-006 9/16/2014	7 O E	2.5	200	< 0.15	< 0.10	ľ	3.1	3.2	NA E	2	< 2.5	< 0.25	20	0000	< 0.24		< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	> 0.068	< 0.068	< 0.068	< 0.034	< 0.068	< 0.034	< 0.034	< 0.034	0.98	< 0.034	< 0.034	1 1	< 0.068	< 0.34	< 0.034 < 0.34	2.2	< 0.034	0.044	< 0.34 < 0.54	< 0.034	< 0.034	< 0.034	< 0.034	< 0.34	< 0.034	< 0.034	< 0.068	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034
9-4-3 4-6'	1409812-005 9/15/2014	000	< 2.8	85	0.42	< 0.11	NA	5.1	3.7	NA	5.7	< 2.8	< 0.28	21	00000	< 0.28		< 0.36	< 0.36	< 0.36	× 0.30	< 0.36	< 0.72	< 0.72	< 0.72	< 0.36	< 0.72	< 0.36	< 0.36	< 0.36	8.5	< 0.36	< 0.36	3.9	< 0.72	< 3.6	< 0.36	8.1	< 0.36	< 0.36	A 3.0	< 0.36	< 0.36	< 0.36	< 0.36	< 3.6	< 0.36	< 0.36	< 0.72	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
'0.5-2.0 6-41 UMW8	1409812-004 9/16/2014	000	5.8		0.59	< 0.11	ΑN	11	00	NA NA	11	< 2.9	0.33	26	010	< 0.26		< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.071	< 0.071	< 0.071	< 0.035	< 0.071	< 0.035	< 0.035	< 0.035	62'0	< 0.035	< 0.035	0.35	< 0.071	< 0.35	< 0.035	69'0	< 0.035	< 0.035	< 0.35	0.063	< 0.035	< 0.035	< 0.035	< 0.35	< 0.035	< 0.035	< 0.071	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
2MWN 14-3 0-0'2,	1409812-003 9/16/2014	800	6.4	180	0.59	0.14	ΑN	14	28	NA NA	10	< 2.8	< 0.28	26	80 0	< 0.29		< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.074	< 0.074	< 0.074	< 0.03/	< 0.074	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	< 0.15	< 0.074	< 0.37	< 0.037	< 0.15	< 0.037	< 0.037	< 0.37	< 0.037	< 0.037	< 0.037	< 0.037	< 0.37	< 0.037	< 0.037	< 0.074	< 0.03/	< 0.037	< 0.037	< 0.037	< 0.037
SWMU 14-2 (20-22,)	1409955-012	807	< 2.6	47	< 0.15	< 0.10	¥.	2.2	5.2	; ×	2.4	< 2.6	< 0.26	12	3000	< 0.24		< 0.36	< 0.36	< 0.36	20.30	< 0.36	< 0.72	< 0.72	< 0.72	× 0.36	< 0.72	< 0.36	< 0.36	× 0.36	> 0.36	< 0.36	< 0.36	7.8	< 0.72	< 3.6	< 0.30	15	< 0.36	0.52	0.00	5.0.4	> 0.36	< 0.36	< 0.36	< 3.6	< 0.36	> 0.36	< 0.72	< 0.36	< 0.36	> 0.36	< 0.36	< 0.36
SWWN 14-2 (18-20.)	1409955-011	702	< 2.5	_	< 0.15	< 0.10	NA	3.6	3.2	AN	2.8	< 2.5	< 0.25	13	0000	< 0.22		< 0.18	< 0.18	< 0.18	× 0.18	< 0.18	< 0.36	> 0.36	< 0.36	< U.18	< 0.36	< 0.18	< 0.18	× 0.10	0.18	< 0.18	< 0.18	2.6	< 0.36	× 1.8	< 1.8	2	< 0.18	< 0.18	0.07	< 0.18	< 0.18	< 0.18	< 0.18	v 1.8	< 0.18	< 0.18	< 0.36	< 0.78	< 0.18	< 0.18	< 0.18	< 0.18
SWMU 14-2 (0.5-2')	1409955-010 9/17/2014	767	2.9		0.48	< 0.11	ΑA		8.4	ΨN	9.6	< 2.7	< 0.27	24	2000	< 0.26		< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	0.00497	< 0.00213	< 0.00213	< 0.00425	< 0.00213	0.0186	< 0.0106	< 0.00425	< 0.00213	< 0.00213	< 0.0106	0.00272	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213	< 0.00213
Source SWMU 14-2 (0-0.5')	1409955-009 9/17/2014	707	(13) > 2.7	210	ш		¥	5.8		Ϋ́	9.0	< 2.7	< 0.27	200	0 000	< 0.27			< 0.00174	< 0.00174	< 0.00174	< 0.00174	< 0.00174				< 0.00174	< 0.00174	< 0.00174	< 0.00174			< 0.00174	< 0.00347	< 0.00174	< 0.00868	< 0.00868	< 0.00347	< 0.00174	< 0.00174		< 0.00174	_		-	< 0.00868	< 0.00174	< 0.00174	< 0.00174	< 0.00174	< 0.00174	< 0.00174	< 0.00174	< 0.00174
Leachate DAF (11.25) (mg/kg) 6 SoilGW			3.20E+00 (13		П	┪	\neg	+	5.51E+UU (9)	5.29E-05 (8)	1 1			7.10E+02 (8)		2.94E-03 (8		Π.	2.87E+01 (8)	2.70E-03 (8)	7.64E-02 (8)	Т	1	П	Т	3 5	1.31E-05 (8	1.98E-04 (8)	\neg	4.56E-U3 (8)	2.25E-01 (9)	Н	3.04E+00 (9)	-		1.13E+01 (8)		(9) (101E+01	E+01		2.70E+00 (8)	_	1.69E-01 (9)	\neg	+	2.48E+00 (8)	Н	4.70E-01 (8)	- 1	- 1	1.03E-01 (8)		4.24E-03 (8)	_
Source		(6)	9	(2)	(2)	(2)	(†	(2)	(a)	(2)	(2)	П	(2)	(2)	(c)	(2)	(2)	(4)	(2)	(4)	(c) (v)	(2)		₫	(4)	(e)	(4)	(4)	(2)	(2)	0)2 (6)	ŀ	9)	È E	I	(2)	(a)	П	П	Т	Т	(£	(9)	£ (6	(2)	(4)	(2)	(2)	(4)	(2)	(2)	(4)	(9)
Non- Residential Soil Screening Level			(1) 2.15E+01	1	Ш	(1) 7.21E+01		(1) 1.34E+H	(2) 3.00E+02	┸	ш				ㅗ	┸		(1) 1.37E+t		(1) 3.94E+01	┸	(1) 4.24F+02		_	(1) 1.21E+00	_		(1) 3.31E+00		4	(2) 2.00E+02	Ш	(2) 2.00E+04		Ц	(1) 9.17E+04	(1) /:UBEH	2) 4.10E+03	(2) 7.20E+(, 100 0	(1) Z.UZE+I	┸	(2) 4.10E+02	- 1	4	(1) 1.62E+03	ш	ш	- 1		1) Z.01E+02	(1) 1.30E+02		
Residential Soil Screening Level		Г	3.13E+01	Т	П	П	3.05E+00	1	Ť	T	1.56E+03	П	7	Ť	Ť	Ť	1	П	П	7.98E+00	Т	Т	Г	П	T	Ť	T	6.72E-01	Ť	Ť	Ť	П	1.60E+03	T	П	3.74E+04	Ť	3.10E+02 (T	- 041	t	t	9.40E+01	T	T	1.55E+03	П	П	T	T	1.56E+02	П		
Analytes		Metals (mg/kg)	senic	arium	eryllium	admium	thromium VI	otal Chromium		Tetraethyl Lead		slenium		En .		vanide	Volatile Organic Compounds - (EPA Method 8260) mg/kg	Tetrachloroethane	-Trichloroethane	1,2,2-Tetrachloroethane	L-Pichkroathana	-Dichloroethene	1,1-Dichloropropene	,2,3-Trichlorobenzene	richloropropane	nchiorobenzene	-Dibromo-3-chloropropane	romoethane (EDB)	Dichlorobenzene	informing (EUC)	rimethylbenzene	3-Dichlorobenzene	3-Dichloropropane	,4-Drank) obelizerie -Methylnaphthalene	2-Dichloropropane	none (MEK)	Uniorotoluene	Vethylnaphthalene	lorotoluene	sopropyltoluene	tanone (metnyl Isobutyl	D W	Bromobenzene	dichloromethane	omoform	omornetnane arbon disulfide	arbon tetrachloride	lorobenzene	sthane (ethyl chloride)	loroform	s-1,2-DCE	cis-1,3-Dichloropropene	ochloromethane	omethane

Table 6 Soil Analytical Results Summary Bloomfield Refinery, Bloomfield, New Mexico

(3.5-4.5')	1201827-	1/2//2012	<0.050	<0.10	00.050	0000	V0.030	<0.15	<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.10		<0.20	<0.20	<0.20	07.00	20.20	02.00	20.20	00.40	<0.30 40 40	<0.40	0.50	<0.50	20.25	07.05	20.20	00.00	20.20	<0.20 <0.20	<0.25	<0.20	<0.50	<0.20	<0.50	<0.50	07.00	SU.40	02.0	02.02	20.20	20.20	20.20	20.20	20.20	<0.20 <0.20	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20
('8.8-8.7) 1-E UMW2	1201871-002	2102/02/1	60000'0>	0000 U>	00000	00000	50.000	<0.0009	<0.0009	<0.0009	<0.0019	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	6000.0>		<0.20	<0.20	<0.20	<0.20	-0.20 -0.20	20.20	<0.20	0.40	<0.30	<0.40	<0.50	<0.50	20.20	<0.20	07.02	20.30	<0.20 <0.20	SZ.0	<0.25	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.40	20.23	20.50	-0.20 -0.20	<0.20	00.00	20.20	<0.20 <0.20	SZ.0	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20
('2.4-2.5) 1-£ UMW2	1201871-001	1/30/2012 <0.001	<0.001	<0.001	00.02	50.00	00.00	×0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.20	<0.20	<0.20	<0.20	20.20	20.20	<0.20	05.00	<0.30	<0.40	<0.50	<0.50 40.50	20.20	<0.20 <0.20	40.20	20.30	40.20 40.20	<0.20	<0.25	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.40	20.23	02.02	<0.20	<0.20	V0.4V	×0.20	40.20 40.20	<0.20	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20
2 (26-28')	1409955-004	9/1/2014	100	1.5	40	200	0.0	8.1	16	46	27	7	€ 0.61	0.61	0.61	55	< 0.61	0.61	< 0.61	0.61	0.61	310		2.1	2.1	2.1	2.1	1.7	2 4	4.5	4.4	3.2	0.0	5.0.3	0.0	2.2.4	7.7	4 E A	0.0	2.1	2.1	2.7	2.1	5.3	2.1	5.3	5.3	7.7	2.7	2.7	2 4	2.1	2.1	2 4	2 1	2.1	2.1	2.1	2.1	5.3	2.1	2.1	2.1	2.1
(181-91) 5-41 UMWS	1409955-003	9/17/2014	3.2	> 0.32	80.0	0.40	0.0	0.49	0.49	0.46	0.48	0.16	> 0.16 <	0.16	> 0.16	0.16	0.16	0.16	0.16	0.16	0.16	4.8	•	< 0.45	0.45	0.45	0.45	7 27	0.45	0.45	0.09	10.07	v !	v !	Ī	0.30	0.45	200	0.45	0.45	0.45	> 0.56	0.45	1.1	> 0.45 <	1.1	1.1	0.45	0.69	0.30	Ī	0.45	0.45	0.40	0.45	0.45	0.45	0.45	0.45	1.1	> 0.45 <	> 0.45 <	.0.45	0.45
('0.5-2.0') 3-4-5 (MWWS	1409955-002	9/17/2014	< 0.00131	< 0.00131	0.00131	00000	0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	< 0.00131	•	< 0.22	< 0.22	< 0.22	< 0.22	20.02	20.02	20.22	1 0 00	V 0.33	00.00	0.56	00.00	07.0	270.50	5 0.22	00.00	27.0.2	< 0.22	< 0.28	< 0.22	> 0.56	< 0.22	< 0.56	< 0.56	27.0	0.044	0.00	20.07	20.02	< 0.22	0.00	20.02	27.0.2	< 0.22	< 0.22	< 0.22	> 0.56	< 0.22	< 0.22	< 0.22	< 0.22
(0-0.5')	1409955-001	S/17/2014	< 0.00135	< 0.00135	0.00136	0.00135	× 0.00133	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135	< 0.00135		< 0.22	< 0.22	< 0.22	< 0.22	20.02	20.02	< 0.22	00.07	< 0.33	*0.04	× 0.54	× 0.04	20.02	< 0.22	< 0.22	70.07	< 0.22	< 0.22	< 0.27	< 0.22	< 0.54	< 0.22	< 0.54	< 0.54	< 0.22	× 0.43	20.27	20.02	< 0.22	< 0.22	× 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.54	< 0.22	< 0.22	< 0.22	< 0.22
SWWU 14-4 (18-20,)	1409B79-002	9/10/2014	< 0.034	< 0.068	0.000	1000	V 0.034	0.10	< 0.10	< 0.034	0.19	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.068		< 0.21	< 0.21	< 0.21	< 0.21	20.04	20.07	< 0.21	1001	× 0.31	< 0.52	< 0.52	× 0.52	× 0.20	12.0 >	0.20	< 0.32	< 0.21	< 0.21	< 0.26	< 0.21	< 0.52	< 0.21	< 0.52	< 0.52	× 0.21	× 0.41	× 0.20	20.07	> 0.21	< 0.21	10.07	> 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.21	< 0.21	< 0.21
(8-9) 4-41 (MWR	1409B79-001	9/10/2014	< 0.00194	< 0.00194	0.00104	00000	× 0.00184	< 0.00194	< 0.00194	< 0.00194	0.00199	< 0.00194		< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194	< 0.00194		< 0.23	< 0.23	< 0.23	< 0.23	0.23	0.00	< 0.23	0.40	< 0.34 < 0.67	< 0.5/	< 0.5/	< 0.57	67.0 >	< 0.23	< 0.23	× 0.37	< 0.23	< 0.23	< 0.29	< 0.23	< 0.57	< 0.23	< 0.57	< 0.57	< 0.23	< 0.46		Ī	< 0.23	< 0.23	07.0 \	0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.23	< 0.23
'0.5-2.0 p-41 UMWS	1409812-002	S/15/2014	< 0.00128	< 0.00128	V 0.00128	0.00120	0.00120	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128	< 0.00128		< 0.00128		< 0.22	< 0.22	< 0.22	< 0.22	2 0 0 2	< 0.22	< 0.22	24:0 /	< 0.32	4 O C C	× 0.54	× 0.54	< 0.27	< 0.22	< 0.22	+ 0.0 ×	< 0.22	< 0.22	< 0.27	< 0.22	< 0.54	< 0.22	< 0.54	< 0.54	< 0.22	< 0.43	× 0.27	27.0 2	< 0.22	< 0.22	20.0 >	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.54	< 0.22	< 0.22	< 0.22	< 0.22
.5.0-0 14-41 UMWS	1409812-001	S/15/2014	< 0.00123	< 0.00123	V 0.00123	0.000 2	× 0.00123	< 0.00123	V	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123	< 0.00123		< 0.22	< 0.22	< 0.22	< 0.22	20.00	20.02	< 0.22	20.0	× 0.33	# CO V	40.04	× 0.04	12.0 %	< 0.22	< 0.22	t 0.07	< 0.22	< 0.22	< 0.27	< 0.22	< 0.54	< 0.22	< 0.54	< 0.54	< 0.22	< 0.43	70.07	27.0 2	< 0.22	< 0.22	7 0 00	× 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.54	< 0.22	< 0.22	< 0.22	< 0.22
91-71 E-71 NWMS	1409812-006	9/10/2014 < 0.03/4	0.54	< 0.068	0	0 000	V 0.034	0.10	0.38	0.45	0.91	0.085	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	2.3		< 0.21	< 0.21	< 0.21	< 0.21	0.00	× 0.21	< 0.21	2 0 0 7	< 0.32	< 0.53	< 0.53	× 0.53	× 0.20	× 0.21	- 0.53	0.00	× 0.21	× 0.21	< 0.26	< 0.21	< 0.53	< 0.21	< 0.53	< 0.53	× 0.21	< 0.42	> 0.20	100	× 0.21	< 0.21	1001	20.0	× 0.21	× 0.21	< 0.21	< 0.21	< 0.53	< 0.21	< 0.21	< 0.21	< 0.21
9-7 t-7 t-8,	1409812-005	9/13/2014 < 0.36	5.4	< 0.72	0.67	90.07	V 0.30	1.1		3.7		3 0.5	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	5		< 0.23	< 0.23	< 0.23	< 0.23	00 07	× 0.23	< 0.23	0.45	V 0.34	0.00	< 0.56	00.00	V 0.20	< 0.23	2.7	V 0.30	× 0.23	< 0.23	< 0.28	< 0.23	< 0.56	< 0.23	< 0.56	< 0.56	< 0.23	× 0.45	V 0.20	20.07	< 0.23	< 0.23	10.02	< 0.23	× 0.23	< 0.23	< 0.23	< 0.23	< 0.56	< 0.23	< 0.23	< 0.23	< 0.23
14-3 0.5-2.0'	1409812-004	9/10/2014	0.4	< 0.071	,900	2000	V 0.033	LL.0 >	0.1	0.26	0.42	0.046	< 0.035	< 0.035	< 0.035	9 < 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	1.5		< 0.23	< 0.23	< 0.23	< 0.23	0000	0.00	< 0.23	0.40	V 0.34	× 0.57	× 0.5/	V 0.0 V	67.0 2	< 0.23	2.5	× 0.37	< 0.23	< 0.23	< 0.29	< 0.23	< 0.57	< 0.23	< 0.57	< 0.57	< 0.23	× 0.40	× 0.29	0.50	< 0.23	< 0.23	V 0.23	× 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.23	< 0.23
.9:0-0 E-#1 NWMS	1409812-003	9/10/2014	5 < 0.037	< 0.074	1 < 0.037	0000	V 0.037	× 0.11	4 < 0.11	9 < 0.037	8 < 0.074	3 < 0.037	< 0.037	< 0.037	< 0.037	0.03	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	7 0.1		< 0.23	< 0.23	< 0.23	< 0.23	4 < 0.23	< 0.23	< 0.23	0.40	A 0.34	< 0.5/	< 0.5/	× 0.50	67.0 %	< 0.23	< 0.23	× 0.37	× 0.23	< 0.23	< 0.29	< 0.23	< 0.57	< 0.23	< 0.57	< 0.57	< 0.23	< 0.46	< 0.29	20.07	< 0.23	< 0.23	0.20	< 0.23	× 0.23	< 0.23	< 0.23	< 0.23	< 0.57	< 0.23	< 0.23	< 0.23	< 0.23
SWMU 14-2 (20-22,)	1409955-012	9/10/2014	7	< 0.72		20.00	× 0.30	1.1	33	6	2 7.	1.	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	1 4.		< 0.21	< 0.21	< 0.21	< 0.21	0 04	20.07	< 0.21	V 0.42	× 0.31	< 0.52	< 0.52	< 0.52	0.20	12.0 >	8 < 0.50	< 0.32	< 0.21	< 0.21	< 0.26	< 0.21	< 0.52	< 0.21	< 0.52	< 0.52	L 2 0 2	< 0.42	× 0.20	2007	< 0.21	< 0.21	10.01	× 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.21	< 0.21	< 0.21
(18-20,)	1409955-01	9/17/2014	4 0.9	> 0.36	0.00	0 0	0.0	× 0.54		0.99	7	0.2	< 0.18	< 0.18	< 0.18	1 < 0.18	< 0.18	< 0.18	< 0.18	< 0.18	< 0.18	.1		< 0.21	< 0.21	< 0.21	< 0.21	7 0 0 7	2007	× 0.2	7 0 0 7	V 0.3	< 0.52	< 0.52	20.0 >	× 0.20	< 0.21	3.	20.0 >	20.2	× 0.21	< 0.26	< 0.21	< 0.52	< 0.21	< 0.52	< 0.52	L 0 40	< 0.42	0.20	100	× 0.21	× 0.21	10.07	2007	20.2	× 0.21	< 0.21	< 0.21	< 0.52	< 0.21	< 0.21	< 0.21	< 0.21
SWMU 14-2 (0.5-2')	1409955-01	SV17/2014	0.0041	< 0.00213	0.00013	0.00213	× 0.00213	< 0.00213	< 0.00213	< 0.00213	0:0030	< 0.00213	< 0.00213	< 0.00213	0 v	90.0022	< 0.00213	< 0.00213	< 0.00213	< 0.00213	0.0	0.0034		< 0.22	< 0.22	< 0.22	< 0.22	2 0 0 2	2 0 22	< 0.22	100	V 0.33	\$ 0.0¢	v 0.54	v 0.04	× 0.27	× 0.22	< 0.22	1007	< 0.22	< 0.22	< 0.27	< 0.22	< 0.54	< 0.22	< 0.54	< 0.54	< 0.22	× 0.44	× 0.27	7 0 0 7	< 0.22	< 0.22	7 0 00	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.54	< 0.22	< 0.22	< 0.22	< 0.22
SWMU 14-2 (0-0.5')	1409955-009	V	(8) < 0.00174	N < 0.00174	0.00174	0.0014	0.00174	< 0.001/4	< 0.00174	< 0.00174	(8) < 0.00174	< 0.00174	(8) < 0.00174	< 0.00174	v	0.00356) < 0.00174) < 0.00174	() < 0.00174	() < 0.00174	(8) < 0.00174	< 0.00174		(8) < 0.22	< 0.22	< 0.22	(8) < 0.22	20.02	(8) > 0.22	0 < 0.22	(0) / 0.44	0.00	40.0 v	0.54 0.54	(8) < 0.34	0.027	22.0 5	(9) < 0.22	1000	< 0.22	(9) < 0.22	< 0.27	< 0.22	(8) < 0.54	< 0.22	< 0.54	(9) < 0.54	< 0.22		- > 0.27	27.0 /	- C 0.22	< 0.22	(8) < 0.22	20.02	27.0 2	(8) < 0.22	< 0.22	0.22	(9) < 0.54	< 0.22	(9) < 0.22	< 0.22	() < 0.22
Leachate DAF (11.25) SainGW		4 07E+00	1.48E-01	4 04E-02	8 405 400	2 447 04	3.11E-01	Z.65E-01 (8		┪	4.63E-02 (8	┪	1.16E+01 (т	1.81E-01 (6.83E+00 (2.64E-01 ((1.57E-02 (9.84E-03 (8.82E+00	7.59E-04 (1.68E+00 (9.92E-02			4.05E-02 (4.04E-01	_	_	_	_		6.48E-U1 (2.25E±01 (2.23E+01 (3	0.115	2 14F+00 //	t		2.22E-02		П	1.35E-03 (+	1.13E-02 (4 845 104		3 83E-03		4.79E+02 (4					3.40E+01	3.71E+02 (4.73E+01 (9	2.59E-01 (9	3.40E-04 (8	2.66E-02 (
Non- Residential Soil Soreening		(4)	(4)	(8)	(9)	2 3	£) ý	Đ.		T	E+02 (5)	T	1.02E+04 (5)		(2)	(2)	(2)	(2)	(2)	(2)	2.84E+01 (4)	(2)	ľ	7.91E+01 (5)	(2)	. :	1.59E+02 (4)	()	(c)	(c)	Ť	5.38E+03 (5)	Т	T	Т	-	(a)	4.10E+03 (6)	(g)	<u>,</u>	=+03	+01 (4)	T	2.15E+01 (5)		П	E+01 (7)	. 6	=+02 (/)	1 545 -04	2	(2)	(4)		(8)	(4)	(4)		(4)		(9)	(9)	(2)	(4)
Source		(4) 1 R1E402	(1) 3.68				(4) 4.02E+03				(1) 1.59E+02		- 1		- 1	- 1	- 1	- 1		(1) 1.13	- 1	(1) 7.98	L	(1) 7.91		⊥		1	Ш		П		П	П		П	П	(2) 4.10	1		П	(1) 5.70E+01	ı	l	H	ш	(3) 8.60E+01	- 100 o	П	(4)	П	1	1	(3)	1	1	(1) 3.23E+01	ı		(2) 2.50		Ш	Ш	
Residential Soil Screening I avel	8	1 825±02	7.51E+01	R 18E+01	3 365 103	2.305-103	9.735402	4.09E+02			4.97E+01		7.26E+03		1.11E+02	5.23E+03	2.95E+02	2.93E+01	6.77E+00	1.23E+03	7.42E-01	8.71E+02		8.29E+01	2.15E+03		3.28E+01	2.20E+01	0.10E+03	0.10E+01	20-100-1	1.23E+03	1.23E+02	1.71E+01	3.56E+00	0.20E+03	3.91E+02	3.10E+02	3.10E+03	1.00L102	3 10F+02	1.18E+01		4.93E+00			2:40E+00	, LOT 0	Z.40E+01	2 405,03	0.40E-100	8 50E±01	1.74F+04	4 POETO	4.905100	1 53E-01	1.53E+00		1.53E+01	2.40E+05	3.10E+04	1.80E+02	3.11E+00	9.93E+01
Annivase	Ministro	howliftwomethana	Vibenzene	hombutadiana	adhoration (cumons)	Sylvenizerie (unifierie)	wellijnier-bulykelier (m. DE.)	ene chloride	benzene	Propylbenzene	phthalene	c-Butylbenzene	rene	ert-Butylbenzene	hloroethene (PCE)	oluene	ans-1,2-DCE	ans-1,3-Dichloropropene	roethene (TCE)	rofluoromethane	nyl chloride	lenes, Total	/olatile Organics - (EPA Method 8270) mg/kg	,4-Trichlorobenzene	hlorobenzene	hlorobenzene	,4-Dichlorobenzene	ymapminalene	Ilcritoropheriol	Inchiorophenol	4-Dischartered	,4-Uimetriyiphenoi	ntrophenol	4-Unitrotoluene	Unitrotoluene	Chloronaphuraene	Chlorophenol	-wethynaphthalene Mathylphanol	yipiletoi adiloo	troohenol	whylohenol	3'-Dichlorobenzidine	Committee	6-Dinitro-2-methylphenol	omophenyl phenyl ether	ro-3-methylphenol	Chloroaniline	Chlorophenyi phenyi ether	Nitrodeniline	Muliophenol	Acceptation	celiapiiuiyiene pilipa	900	macene	one izelië	ployed	nzo(h)filioranthene	a.h.iberylene	nzo(k)fluoranthene	Benzoic acid	alcohol	hloroethoxy)methane	hloroethyl)ether	hloroisopropyl)ether

Table 6 Soil Analytical Results Summary Bloomfield Refinery, Bloomfield, New Mexico

Note Part			Non- Docidantial		WN 14-2 (0-0.5')	('S-2.0) S-Þ1 UM	MU 14-2 (18-20')	MU 14-2 (20-22')	/WU 14-3 0-0.5'	.9-† E-†l NWW	.91-41 E-41 NW	.9'0-0 t-t1 NW/	10.5-2.0 h-41 UM	('8-8) 4-41 UMV	MU 14-4 (18-20')	('2.0-0) 8-41 UM		WN 14-5 (26-28')	(3.5-4.5')	('2.8-2.7) 1-£ UM	(3.5-4.5')
Statistic Stat	Analytes		Soil Screenin Level	Sour	onos MS	ws	ms			ıs	ws	ws	ws	ΛS	ms				MS	MS	MS
Statistic Colored Co					1409955-009	1409955-01	-	_	-	_	1409812-006	-	-	-	-	-	-	-			
State Stat	Bis/2.athulhaw/llohthalata	3 805403	4) 1.835403	⊢	٧	2014		2014	V2014	V	2014	2014	2014	2014	2014	2014	. \	4	1/30/201	Т	1/27/2012
State Stat	Butyl benzyl obthalate	Ť	L	4		ı	Τ	T		< 0.23	T		T	T	Ī	T	< 0.45	Ī	\$0.50	\$0.50 \$0.50	<0.20
1985 1985	Carbazole	t	L	-			Т			< 0.23							× 0.4		<0.20	<0.20	<0.20
1 1 1 1 1 1 1 1 1 1	Chrysene	1.53E+02 ((1) 3.23E+03	Ш	(8) < 0.22		П			< 0.23			Ì		V		< 0.48		<0.20	<0.20	<0.20
Statistic 10 23 23 23 24 24 24 24 24	Di-n-butyl phthalate	Ħ	Ц	ш		Ш	П			< 0.56		П	П		П	П	× 1.1	П	<0.20	<0.20	<0.20
Miles Mile	Di-n-octyl phthalate				- < 0.44		П			< 0.45							> 0.86		<0.20	<0.20	<0.20
String Color Col	Dibenz(a,h)anthracene	T	_	_	(8) < 0.22		7			< 0.23				Ī			< 0.45	Ì	<0.20	<0.20	<0.20
STATION Control Cont	Dibenzofuran			_			T			< 0.23				Ī		Ì	< 0.45	Ì	<0.20	<0.20	<0.20
2,5876-00 1,0000-00 1,00	Diethyl phthalate	Ť	4	_	(8) < 0.22		╅			< 0.23				T		T	< 0.45	T	<0.50	00.50	<0.50
3.286600 11 1.0066440 01 3.68620 01 6.222 6.221 6.221 6.221 6.221 6.222 6.22	Fluoranthene	Ť	Ĺ	_	(8) < 0.22		T			< 0.23			Ī	T		Ť	× 0.45	Ť	<0.20	<0.20	<0.20
State-off 1 State-off State off	Tuorene	2.32E+03	(1) 1.00E+04	┖			t	0.43		< 0.23						ĺ	< 0.4€	Ė	<0.20	<0.20	<0.20
Street 11 Street 12 Street 12 Street 13 Street 13 Street 14 Street 14 Street 15	Hexachlorobenzene		Ц	Н			П			< 0.23							< 0.45	Ì	<0.20	<0.20	<0.20
State Continue C	exachlorobutadiene	6.16E+01	(1) 2.69E+02	4			7		T	< 0.23	I	T	T	T		Ī	< 0.45	Ì	<0.20	<0.20	<0.20
158500 10 20000 10 20	exachlorocyclopentadiene	3.70E+02	(1) 8.67E+02	4	< 0.22	V	Ī			< 0.23	I	I	I	I			× 0.4	Ī	<0.20	0.20	<0.20
Signature Control of Control	deno(1.2 3-cd)pyrene	1 535+00	(1) 3.23E+01	, <u>-</u>	< 0.22	/ V	T			< 0.23		T		T	Ī	T	4 0 A	Ť	0.20	<0.20	<0.20
See See	ophorone	5.61E+03	(1) 2.70E+04	┸	< 0.54	V				< 0.56							v 1.1		<0.50	<0.50	<0.50
1 1 1 1 1 1 1 1 1 1	-Nitrosodi-n-propylamine	6.90E-02	(3) 2.50E+00	٢	$\overline{}$	V				< 0.23				ľ			< 0.45		<0.20	<0.20	<0.20
4-8Fe-ford 101 53-8Fe-ford 101 53-8F	-Nitrosodiphenylamine	Ì	Ц	ш		۷	П	П		< 0.23			П	П		V	< 0.45	П	<0.20	<0.20	<0.20
Special Orange Control orange Cont	aphthalene	Ť	4	4		1	1.4	5.6		1.1	0.39		1		Ì	Ì	× 0.45		<0.20	<0.20	<0.20
1 1 2 2 2 2 2 2 2 2	trobenzene	6.04E+01	(1) 2.93E+02	_		V	Ì	I	I	< 0.56	I		T			Ī	L. L >	Ī	<0.50	<0.50 40 40	40.50 40
138E-04 11 718E-04 10 128E-04 12 12 12 12 12 12 12 1	enanthrene	1.74E+03	(1) 7.53E+03	┸		T	0.33	1		< 0.23							5	0.5	<0.20	<0.20	<0.20
174E-03 11 7.5E-03 12 1.0E-02 12 1.0E-02 13 1.0E-02 14 1.0E-02 15 1.0E-02 15 1.0E-02 15 1.0E-03 15 1.0E-02 1.0E	enol	1.83F+04	(1) 7.74E+04	_	(8) < 0.22	V				< 0.23			Γ	T		ĺ	< 0.4		<0.20	<0.20	<0.20
Total Contro	rene	1.74E+03	(1) 7.53E+03	٦	(8) < 0.22	V	Ī			< 0.23				Ī		Ī	< 0.45	Ī	<0.20	<0.20	<0.20
1,000 feet of the control of the c	ridine	7.80E+01	_	_		v				< 0.56							, 1.1		<0.50	<0.50	<0.50
1,00E=03 (11) 3,80E=03 (12) < 11	otal Petroleum Hydrocarbons - (EPA Method 8015B) mg	/kg				737	AE	770 / 37	-		OV			V	71/23		ŀ			0 27	0 4/
1,00E-03 (11) 3,86E-03 (11) -	Source renge organics (ONO)	t	L			5	2	0			P				5						9
3.00E-03 (12) 5.00E-03 (12) .	esel Range Organics (DRO)	Ť	_	(11)	v 11	v 11	300	1000	17		96			_						30	8.6>
No. Teachening level of an analytical result a variable No. Teachening Levels (April 2009) 1 NETE Residential Careening Levels (April 2009) 1 NETE Residential Screening Levels (April 2009) 1 Natible To not be careening Levels (April 2009) 1 Natible To not be careening Levels (April 2009) 1 Natible Condential Screening Levels (April 2009) 2 Natible Natible Screening Levels (April 2009) 2 Natible Natible Screening Levels (April 2009) 3 Solicity NINED Table Screening Levels (April 2009)	otor Oil Range Organics (MRO)		_	(12) -		× 54 ×			< 58	< 55										51	<49
I) MMED Residential Screening Level Residential Screening	No screening level or analytical result available IMED - Risk Assessment Guidance for Site Investigatio PA - Recional Screening Levels (April 2009)	ins and Remediatio	nn (Dec. 2014)																		
An explaned and section of the Action of the Action of the July 7, 2007 PER A Realestian Screening Levels (April 2009) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007 MMED Order because the constituent is lated as a carcinogenic NMED Order because the constituent is lated as a carcinogenic NMED Order because the constituent of Screening Level NMED Order because the constituent of Screening Level Shall Annotharia – Screening Level NMED Order because the constituent is lated as carcinogenic Shall Annotharia – Screening Level Shall Annotharia – Screening Level Shall Annotharia – Screening Level Shall Annotharia – Screening Level Shall Annotharia – Screening Level Shall Annotharia – Screening Level Shall Annotharia – Shall Annotharia – Shall Annotharia Level Shall Annotharia – Shall Annotha	1) NMED Residential Screening Level																				
If WRID Index real uses the constituent is late as a sarcinogenic If WAIRD INDEX Carearing Level If MAIRD INDEX Carearing Level If Anniarial - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria - Screening Level If Anniaria	z) EPA Kesidental Screening Level 3) EPA Residential - Screening Levels (April 2009) mul	Itiplied by 10 pursus	ant to Provision ∖	/II.B. of the July 7, 2	200.																
i) (MRED Construction Worker Screening Level The Anturatival - Screening Level (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009) Secreting Levels (April 2009)	IMED Order because the constituent is listed as carcinc the NMED Industrial Occupational Screening Level	ogenic																			
EPA fundamental - Societing Levels (April 2009) BEAT modulating - Societing Levels (April 2009) BEAT modulating - Societing Levels (April 2009) BEAT modulating to the constituent is listed as carcinogenic by 10 pursuant to Provision VII.B. of the July 7, 2007 BEAT MAIN Conference (DAF) = 11.25 BEAT MAIN CONFERENCE OF THE TILL SOCIETING THE MAIN CONFERENCE OF THE TILL SOCIETING THE TILL	NMED Construction Worker Screening Level																				
MED Order because the constituted is listed as cardinogenic. Negolia WinkD Table 6-2 TPH Soil Screening Levels "kinown oil" with DAF = 1.0 - see report Section 5 for use of recommendation of the constitution) EPA Industrial - Screening Levels (April 2009) DEDA Industrial - Screening Levels (April 2009) multipl	lied by 40 pureriant	. IV noisivord of	2 of the link 7 200	_																	
With Sea Delian Art Hatton Art Earl 125 Solicity With Sea Delian Art Hatton Art Earl 125 (o) Solicity Widt Dable 6-2 Thy Solicity With Dable 11.25 Treening Levels "Unrown oil" with Dable 10 - see report Seaton 5 for use of	MED Order because the constituent is listed as carcino	ogenic		D. of the only 7, 500																	
a) Soliciw Naksaeae LPA AP = 11.25 (io) Soliciw McL-baeae EPA DAF = 11.25 Trenmig Tevels "Likrown oil" with DAF = 1.0 - see report Section 5 for use of	3) SoilGW NMED Dilution Attenuation Factor (DAF) = 1	11.25																			
(u) Sollow intcased EFY ADA" = 11.25 Tollow into Pate 6-2 TPH Soll Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of Tollowing levels be 6-2 TPH Soll Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of)) SoilGW Risk-based EPA DAF = 11.25																				
The first of the control of the cont	10) SOIIGW WCL-based ETA DAF = 11.23	= AVD Owith DAR =	10 - eee renort 6	odion 5 for use of																	
	screening levels		-																		

screening levels (12) NMED Table 6-2 TPH Soil Screening Levels "Waste Oil" with DAF = 1.0 - see report Section 5 for use of

screening levels
(13) arsenic screening level adjusted for site-specific

Table 6
Soil Analytical Results Summary
Bloomfield Refinery, Bloomfield, New Mexico

Analytes	Residertial Soil Screening Level	Source	Non- Residential Soil Screening Level	Source	Leachate DAF (11.25) (mg/kg) SoilGW	Source	-8.7) E-E UMWS	SWMU 3-3 (24	
							1201827-006	1201827-007	1201827-008
	3.13E+01	(1)	1.42E+02	(2)	3.69E+00	(8)	<2.5	<2.5	<12
	П	(1)	2.15E+01		3.20E+00	(13)	<2.5	<2.5	
	1.56E+04	3	4.35E+03	(2)	1.52E+03	(8)	160	44	
	7.05E+0Z	3 3	7.345±02	(2)	1.10E+02		0.35	<0.15	<0.75
	3.05E+00	3	6 69F+01	(4)	5.45F±02	(8)	NA.	NA.	NA NA
	9.66E+01	(1)	1.34E+02	(2)	1.13E+05		ı		3
	2.30E+01	(2)	3.00E+02	(9)	5.51E+00	(6)	3.3		4.6
	4.00E+02	3	8.00E+02	(4)					7.3
	6.16E-03	(1)	3.54E-02	(2)	5.29E-05	(8)	NA	NA	NA
	1.56E+03	(1)	6.19E+03	(2)	2.73E+02	(8)			2.8
	3.91E+02	(1)	1.75E+03	(2)	5.75E+00	(8)		<2.5	<12
	3.91E+02	(1	1.77E+03	(2)	7.74E+00	(8)	<0.25	<0.25	<1.2
	3.94E+02	(1)	6.14E+02	(2)	7.10E+02	(8)	18	7	24
	2.35E+04	(1)	1.06E+05	(2)	4.17E+03	(8)	19	7.1	25
	2.38E+01	(1)	2.07E+01	(2)	3.68E-01	(8)	<0.033	<0.033	<0.033
	1.12E+01	(1)	1.21E+01	(2)	2.94E-03		<0.3	<0.3	<0.3
Volatile Organic Compounds - (EPA Method 8260) mg/kg				ĺ					
1,1,2-Tetrachloroethane	2.81E+01	9	1.37E+02	(4)	2.02E-02	(8)	(8) <0.050	<0.050	<0.048
	1.44E+04	(1	1.36E+04	(2)	2.87E+01	(8)	<0.050	<0.050	<0.048
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	2.70E-03	(8)	<0.050	<0.050	<0.048
	2.61E+00	(1)	2.30E+00	(2)	1.25E-03	(8)	<0.050	<0.050	<0.048
	7.86E+01	(1)	3.83E+02	(4)	7.64E-02	(8)	<0.10	<0.10	>0.096
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(2)	1.10E+00		<0.050	<0.050	<0.048
					-		<0.10	<0.10	960'0>
					-		<0.10	<0.10	960'0>
	5.10E-02	(1)	1.21E+00	(4)	2.93E-05		<0.10	<0.10	>0.096
	8.29E+01	(1)	7.91E+01	(2)	9.92E-02	(8)	<0.050	<0.050	<0.048
2,4-Trimethylbenzene	6.70E+01	(2)	2.80E+02	(9)	2.70E-01	(6)	0.058	1.4	1.8
.2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	1.31E-05	(8)	<0.10	<0.10	>0.096
JB)	6.72E-01	ε	3.31E+00	(1.98E-04		<0.050	<0.050	<0.048
	2.15E+03	£	2.50E+03	(2)	2.57E+00			<0.050	<0.048
1,2-Dichloroethane (EDC)	8.32E+00	£	4.07E+01	4	4.58E-03			<0.050	<0.048
	1.78E+01	ε	2.54E+01	(2)	1.37E-02		<0.050	<0.050	<0.048
5-Trimethylbenzene	4.70E+01	(5)	2.00E+02	(9)	2.25E-01	(6)	<0.050	0.16	0.4
							<0.050	<0.050	<0.048
	1.60E+03	(5)	2:00E+04	(9)	3.04E+00	(6)	<0.050	<0.050	<0.048
	3.28E+01	£	1.59E+02	(4)	4.05E-02		<0.050	<0.050	<0.048
	2.20E+01	(3)	9.90E+02	6	1.69E-01	(6)	<0.20	2.2	1.2
							<0.10	<0.10	960:0>
	3.74E+04	(1)	9.17E+04	(2)	1.13E+01	(8)	<0.50	<0.50	<0.48
	1.56E+03	(1)	7.08E+03	(2)	2.00E+00		<0.050	<0.050	<0.048
							<0.50	<0.50	<0.48
	3.10E+02	(2)	4.10E+03	(9)	1.01E+01	(6)	<0.20	3,9	2.6
	5 50F+03	(2)	7 20F+04	(9)	3 15F+01		<0.050	<0.050	<0.048
4-Isonron/Itoliene		į.					<0.050	<0.050	0.052
(mathyl isohrityl katona)	5 81E±03	Ε	2 02E+04	(6)	2 70F ±00	(8)	<0.50	<0 50 A	<0.48
(2000)	6 63E+04	5	2 42E+05	(8)	2 BDE +01	(8)	<0.75	<0.75	<0.20
	1 78E±01	5	8 72E+01	(4)	2 14E-02	(8)	<0.050	020 02	<0.048
	0.400.00	9	4 405400	(8)	4 EOE 04	9	0000	0000	0000
Dromodishloromothono	9.405401	(4)	9.00E±04	9	3 40E 03		0000	VO 050	V0.040
D.	0.19E+00	3	3.025+01	ŧέ	0.49E-03	0 0	20.000	00000	VO.040
	4 775-04	3	3.23E+03	(4)	4 02E 00	П.	0000	×0.000	00.040
	1.77E+01	3	1.79E+01	(c) (c)	1.93E-02		<0.40	<0.40 40.40	<0.36
	1.55=+03	Ξ;	1.6ZE+U3	(a)	2.48E+00		00.00	00.05	<0.46
	1.07E+01	Ē	5.25E+01	£	1.8/E-02		or.0>	or.0>	<0.096
	3.78E+02	Ê	4.12E+02	(2)	4.70E-01		<0.050	<0.050	<0.048
Chloroethane (ethyl chloride)	1.90E+04	£	1.66E+04	(2)	6.04E+01		<0.10	<0.10	>0.096
	5.90E+00	£	2.87E+01	(4)	6.14E-03	(8)	<0.050	<0.050	<0.048
	4.11E+01	£	2.01E+02	(4)	5.35E-02	(8)	<0.15	<0.15	<0.14
	1.56E+02	(1)	7.08E+02		1.03E-01	(8)	<0.050	<0.050	<0.048
cis-1,3-Dichloropropene	2.93E+01	£	1.30E+02	(2)	1.57E-02	(8)	<0.050	<0.050	<0.048
									0,00
D	1.39E+01	3	6.74E+01		4.24E-03	(8)	<0.050	×0.050	<0.048

Table 6
Soil Analytical Results Summary
Bloomfield Refinery, Bloomfield, New Mexico

Analytes	Residential Soil Screening Level	Source	Non- Residential Soil Screening Level	Source	Leachate DAF (11.25) (mg/kg) SoilGW	Source			8 SMWN 3-3 (5e-
							1201827-006	1201827-007	1201827-008
	1.82E+02	(1	1.61E+02	(2)	4.07E+00	(8)	<0.050	<0.050	<0.048
	7.51E+01	Ξ	- 1	(4)	1.48E-01	(8)	<0.050	2.9	0.11
	6.16E+01	Ξ	- 1	(2)	4.94E-02	(8)	<0.10		
	2.36E+03	Ξ	- 1	(2)	6.40E+00	(8)	<0.050	0.65	
	9.75E+02	£		(4)	3.11E-01	(8)	<0.050	<0.050	<0.048
	4.09E+02	3	- 1	(2)	2.65E-01	(8)	<0.15	<0.15	<0.14
		,				•	<0.050	2.5	
						,	<0.050	3.2	0.57
	4.97E+01	(1)	1.59E+02	(2)	4.63E-02	(8)	<0.10	2.5	
						٠	<0.050	0.73	
	7.26E+03	(1)	1.02E+04	(2)	1.16E+01	(8)	<0.050	<0.050	<0.048
			-				<0.050	<0.050	<0.048
	1.11E+02	(1)	1.20E+02	(2)	1.81E-01	(8)		<0.050	<0.048
	5.23E+03	(1)	1.40E+04	(2)	6.83E+00	(8)		<0.050	<0.048
	2.95E+02	(1)	3.05E+02	(2)	2.64E-01	(8)		<0.050	<0.048
	2.93E+01	(1)	1.30E+02	(2)	1.57E-02	(8)	<0.050	<0.050	<0.048
	6.77E+00	3	6.90E+00	(2)	9.84E-03	(8)	<0.050	<0.050	<0.048
	1.23F+03	ε	1.13F+03	(2)	8.82F+00	(8)	<0.050	<0.050	<0.048
	7.42F-01	ε	2 84F+01	(4)	7 59F-04	(8)	<0.050	<0.050	<0.048
	8.71E+02	ε	7.98E+02	(2)	1.68E+00	(8)	<0.10	0.33	
Semi Volatile Organics - (EPA Method 8270) mg/kg		1						ı	
	8.29E+01	(1)	7.91E+01		9.92E-02	(8)	<0.20	<0.20	<0.20
	2.15E+03	(1)	2.50E+03	(2)	2.57E+00	(8)	<0.20	<0.20	<0.20
						Ŀ	<0.20	<0.20	<0.20
	3.28E+01	(1)	1.59E+02	(4)	4.05E-02	(8)	<0.20	<0.20	<0.20
	2.20E+01	(3)	9.90E+02	(2)	1.69E-01	(6)	<0.20	2.3	1.2
	6.16E+03	(1)	2.69E+04	(2)	3.72E+01	(8)	<0.20	<0.20	<0.20
	6.16E+01	(1)	2.69E+02	(2)	3.79E-01	(8)	<0.20	<0.20	<0.20
	1.85E+02	(1)	8.07E+02	(2)	4.64E-01	(8)	<0.40	<0.40	<0.40
	1.23E+03	(1)	5.38E+03	(2)	3.63E+00	(8)	<0.30	<0.30	<0.30
	1.23E+02	(1)	5.38E+02	(2)	3.77E-01	(8)	<0.40	<0.40	<0.40
	1.71E+01	9	8.23E+01	(4)	2.76E-02	(8)	<0.50	<0.50	<0.50
	3.56E+00	9	1.72E+01	(4)	5.74E-03	(8)		<0.50	<0.50
	6.26E+03	£	2.83E+04	(2)	3.21E+01	(8)	<0.25	<0.25	<0.25
	3.91E+02	Ξ	1.77E+03	(2)	6.48E-01	(8)		-	<0.20
	3.10E+02	(5)	4.10E+03	(9)	1.01E+01	6)		4.1	2.4
	3.10E+03	(5)	3.10E+04	(9)	2.25E+01	6)		<0.50	<0.50
	1.80E+02	(2)	1.80E+03	(9)	3.71E-01	(6)		<0.20	<0.20
				·		٠	<0.20		<0.20
	3.10E+02	(2)	3.10E+03	(9)	2.14E+00	(6)			<0.20
	1.18E+01	(1)	5.70E+01	(4)	6.90E-02	(8)	<0.25	<0.25	<0.25
		·		·		٠	<0.20	<0.20	<0.20
	4.93E+00	(1)	2.15E+01	(2)	2.22E-02	(8)	<0.50	<0.50	<0.50
				·		Ŀ	<0.20	<0.20	<0.20
						Ŀ	<0.50	<0.50	<0.50
	2 40F+00	(3)	8 60F+01	6	1.35F-03	6)	<0.50	<0.50	<0.50
						Ì		<0.20	<0.00
	2 405+04	(3)	0 805103	(2)	4 425 00	(0)		07.07	07.07
	0.101.7	ì	0.00F.0E	}	1000	(6)		20.00	20.07
	- 107 0	. (4 547.04	(4)	- 100	. 6		00.00	00.00
	3.400,00	Ξ	1.01014	(0)	4.0401	(0)		02.0	0.20
						·	<0.20	<0.20	<0.20
	8.50E+01	(3)	3.00E+03	8	3.83E-02	(6)	<0.20	<0.20	<0.20
	1.74E+04	Ξ	7.53E+04	(2)	4.79E+02	(8)	<0.20	<0.20	<0.20
	4.90E+00	3	2.20E+02	6	5.74E-03	6)	<0.20	<0.20	<0.20
	1.53E+00	Ξ	3.23E+01	4	1.03E+00	8	<0.20	<0.20	<0.20
	1.53E-01	(1)	3.23E+00	(4)	3.40E-01	(8)		<0.20	<0.20
	1,53E+00	(1)	3.23E+01	(4)	3,47E+00	(8)		<0.20	<0.20
						L		-U 20	00 0>
	1 535401	(1)	3.03E±00	(4)	3 40E±01	(0)	V 02.02	<0.00	V 02 02
	2 405-05	9	201707	(8)	9 74 5 400	9		04.07	04.07
	Z.40E+U5	(2)	2.50E+U0	(o)	3.7 IE+02	(R)	00.00	V0.50	00.0
	3.10E+04	(5)	3.10E+05	(9)	4.73E+01	(6)		<0.20	<0.20
	1.80E+02	(2)	1.80E+03	(9)	2.59E-01	(6)	07:0>	<0.20	<0.20
	3 11 11 100	141	4 0511100						
	3	Ξ	00+308.I	(2)	3.40E-04	(8)	<0.20	<0.20	<0.20

Table 6 Soil Analytical Results Summary Bloomfield Refinery, Bloomfield, New Mexico

Residential Soil Screening Level	Source	Non- Residential Soil Screening Level	Source	Leachate DAF (11.25) (mg/kg) SoilGW	Source	7) E-E UMWS	-£ NWMS) E-E UMWS
						1201827-006	1201827-007	1201827-008
						1/27/2012	1/27/2012	1/27/2012
3.80E+02	1	1.83E+03	(4)	1.12E+02	(8)	<0.50		<0.50
2.60E+02	(2)	9.10E+03	(2)	7.54E+00	(6)	<0.20		<0.20
						<0.20	<0.20	<0.20
1.53E+02	£	3.23E+03	(4)	1.05E+02	(8)	<0.20		<0.20
6.16E+03	£	2.69E+04	(2)	1.90E+01	(8)	<0.20		<0.20
			,			<0.20	<0.20	<0.20
1.53E-01	3	3.23E+00	(4)	3.44E+00	(8)	<0.20	<0.20	<0.20
	-					<0.20		<0.20
4.93E+04	3	2.15E+05	(2)	5.51E+01	(8)	<0.50		<0.50
6.11E+05 ((1)	H	(2)	9.06E+02	(8)	<0.25		<0.25
П	(1)	Н	(2)	7.52E+02	(8)	<0.20		<0.20
2.32E+03	3	1.00E+04	(2)	4.50E+01	(8)	<0.20		<0.20
3.33E+00	3	1.60E+01	(4)	5.19E-02	(8)	<0.20		<0.20
П	(1)	П	(2)	4.94E-02	(8)	<0.20		<0.20
3.70E+02	(1)	H	(2)	7.52E-01	(8)	<0.20		<0.20
П	(1)	1.88E+02	(2)	3.72E-02	(8)	<0.20		<0.20
1.53E+00 ((1)	3.23E+01	(4)	1.13E+01	(8)	<0.20		<0.20
H	(1)	H	(4)	2.38E+00	(8)	<0.50		<0.50
	(2)	Н	(7)	1.24E-04	(9)	<0.20		<0.20
П	(1)	П	(4)	5.54E-06	(8)	<0.20	<0.20	<0.20
4.97E+01	3	1.59E+02	(2)	4.63E-02	(8)	<0.20	1.5	0.93
6.04E+01	3	2.93E+02	(4)	8.10E-03	(8)	<0.50	<0.50	<0.50
Ħ	(1)	П	(4)	3.42E-02	(8)	<0.40	<0.40	<0.40
1.74E+03	3	Г	(2)	4.83E+01	(8)	<0.20	0.25	<0.20
1.83E+04	3	7.74E+04	(2)	2.94E+01	(8)	<0.20	<0.20	<0.20
1.74E+03	3	7.53E+03	(2)	1.08E+02	(8)	<0.20		<0.20
7.80E+01	.5)	1.00E+03	(9)	1.09E-01	(6)	<0.50		<0.50
	Н		П			<5.0	100	28
1.00E+03	1	3.80E+03	1			12	380	150
3.00E+03	12)	5.00E+03	12)			<49		<48
		80E-02 (1) 50E-02 (1) 10E-03 (1) 50E-02 (1) 50E-02 (1) 50E-03 (1) 50E-04 (1) 10E-03 (1) 10E-03 (1) 10E-03 (1) 10E-03 (1) 10E-03 (1) 10E-04	(1) 1.83E+03 (2) 9.10E+03 (3) 9.10E+03 (4) 2.82E+03 (5) 2.82E+03 (1) 2.38E+03 (1) 2.38E+03 (1) 1.00E+04 (1) 1.00E+04 (1) 1.00E+04 (1) 3.20E+03 (1) 2.82E+03 (1) 3.80E+03 (1) 3.80E+03 (3) 3.80E+03 (4) 3.80E+03 (4) 3.80E+03 (5) 3.80E+03 (6) 3.80E+03 (7) 3.80E+03 (8	(i) 1.88E-05 (i) 2.32E-06 (i) 2.32E-06 (ii) 2.32E-07 (ii) 2.32E-07 (ii) 2.3E-07 (ii) 1.00E-04 (ii) 2.3E-07 (ii) 2.3E-07 (ii) 2.3E-07 (ii) 2.3E-07 (ii) 3.2E-07 (ii) 3.2E-07 (ii) 3.2E-07 (iii) 3.2E-07	(1) 1881-03 (4) (7) (2) 2881-03 (4) (7) (2) 2881-03 (4) (7) (2) 2881-03 (4) (7) (2) 2881-03 (4) (7) (2) 2881-03 (4) (7) (2) 2881-03 (4) (7) (2) 2881-03 (4) (7) (2) 2881-03 (4) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) 2881-03 (7) (7) (7) (7) 2881-03 (7) (7) (7) (7) (7) 2881-03 (7) (7) (7) (7) (7) (7	(1) 1881-03 (4) 1.12E-402 (8) (9) 10E-402 (9) (1) 2.2EE-402 (9) 1.0EE-402 (9) 1.2EE-402 (1) 188E-03 (4) 1.12E-02 (8) 4.020 (1) 9.10E-03 (7) 7.5EE-00 (9) 4.020 (1) 9	(1) 188E-03 (4) 1.12E-02 (6) 6.050 (7.07013 (1) 3.26E-04 (7.07013) (7.07013) (7.020 (

- No screening level or analytical result available
- No screening level or analytical result available
- No screening level or analytical result available
- No screening level or analytical result available
- No screening level or analytical result available
- New Feed available
- Residential Screening Levels (April 2009) multiplied by 10 pursuant to Provision VIIB. of the July 7, 2007
- NMED notatified Screening Levels (April 2009) multiplied by 10 pursuant to Provision VIIB. of the July 7, 2007
- NMED order because the constituent is listed as carcinogenic
- (3) MMED construction Worker Screening Levels (April 2009) multiplied by 10 pursuant to Provision VIIB. of the July 7, 2007
- NMED construction Worker Screening Levels (April 2009)
- (3) EAP Industrial - Screening Levels (April 2009)
- (4) NMED Dotter because the constituent is stead as carcinogenic
- (6) Soliciow MiAL-based EPA DAF = 11.25
- (10) Soliciow MiAL-based EPA DAF = 11.25
- (10) Soliciow MiAL-based EPA DAF = 11.25
- (11) NMED Table 6-2 TPH Soil Screening Levels "Windown oil" with DAF = 1.0 - see report Section 5 for use of
- screening levels
- (11) NMED Table 6-2 TPH Soil Screening Levels "Waste Oil" with DAF = 1.0 - see report Section 5 for use of

screening levels
(13) arsenic screening level adjusted for site-specific

background concentration

Bold represents value above Non-Residential Screening Level

Table 7 Groundwater Analytical Results Summary Bloomfield Refinery - Bloomfield, New Mexico

	4	4	ı		П	Τ.	П	1	3	Т	Τ	6	1	99	2.4	П	П	ις.	\neg	\neg	유	\neg	42	\top	7	T	П	S	\neg	1	3	45	2 1	۱:	т	Ç	٥	\top	9	⊋	_	П
(E1-E1 UMW2) 9T-WM	12/16/2014	1412839-004		< 0.0050	< 0.010	2	< 0.0020	< 0.0020	Ĭ)	09000	< 0.0060		< 0.0050	•	2	< 0.00020	< 0.010	4	< 0.050	< 0.0050	54	< 0.050	0.024	< 0.0010	2	< 0.0020	< 0.0020	16	< 0.0060	< 0.0060		0.0042	٥١	000000	0.00020	0.0.0	0000	0.020	0.0050	0.050	0.017	< 0.0100
(E1-E1 UMW2) 37-WM	11/6/2014	1411273-001		< 0.0010		1.9			001	09000		3.2		92	2.5	< 0.00020	< 0.010	4.5		< 0.0050	560	\neg	0.57	< 0.0010 < 0.001	2.9		< 0.0020		0.011		23	0.013	- 0		040	2 0	6.0			0.050	0.055	
(31-E1 UMWS) 37-WM	12/16/2014	1412839-003		< 0.0050 < (0.014 < 0.020	1.5			001	00000		6.1		34	2.1	50		3.5		< 0.0050 < (510			0.0010	2.9	3022		120	0.044	0.021	20	0.028	040		C	0.025	7.7			0.066	0.13	
(81-81 UMW8) 87-WM	11/6/2014	1411272-001		< 0.0010 <	0.02	1.6	П		BB BB	09000		4.9	0.002 < 0.0050	34	1.8	< 0.00020 <		3.4	Ì	< 0.0050 <	480	< 0.050	0.11	< 0.0010 <	2.9		< 0.0020 <	120	0.031	0.016	38	0.021	47		ç	0.020	4.0	1		0.050	0.09	< 0.0100 <
(8-81 UMWS) 47-WM	11/6/2014	1411271-001		< 0.0010	< 0.020	1.9			0/-	09000		3.1	0.007	53	4.4	< 0.00020	0.015 < 0.010	4.9		< 0.0050	370		0.05	< 0.0010 < 0.0010	2		< 0.0020	190	< 0.0060	< 0.0060	5.2	0.0098	6	000000	0.40	0.0 12				050 0	0.015	
(T1-E1 UMWS) ET-WM	12/16/2014	1412839-002		< 0.0010	< 0.010	0.47			081	00000		1.2	0.003	45	2.3	< 0.00020	< 0.010	5.5		< 0.0050	420	\neg	.011	< 0.0010 0.0010			< 0.0020	150	< 0.0060	< 0.0060	10	0.011	9 4		0.00020	010.0 0	6.9			430	0.022	
(T1-E1 UMWS) ET-WM	11/6/2014	1411267-001		< 0.0010	< 0.010	717	П		071	09000		1.9	0	23	3	< 0.00020	< 0.010	6.3		< 0.0050	450		0.13	< 0.0010	1.3		< 0.0020	200	0.013			0.0	10		7	0.00	0101	21.0		470 2 0.050	0.05	< 0.0100
(81-81 UMW2) 27-WM	12/16/2014	1412839-001		< 0.0010	< 0.010	1.1	< 0.0020	< 0.0020	140	- 0 00e0	< 0.0060	8.8	0.0013	26	2.9	< 0.00020	< 0.010	5.3	< 0.010	< 0.0050	380	< 0.050	0.014	< 0.0010	1.6	0.0033	< 0.0020	150	0.027	0.021	50	0.034	0.0	3.2	V.00020	0.00	10	< 0.10	< 0.0050	0.00	0.12	< 0.0100
(81-81 UMW2) 27-WM	11/6/2014	1411265-001		< 0.0010	< 0.020	3.87			130	00000	I	7.5	0.002	53	2.5	< 0.00020	< 0.010	5.2		< 0.0050	380).12	< 0.0010	1.2	0.0032	< 0.0020	160	0.018	0.016	38	0.03	400	0.0000	č	0.024	0.000	١,		0.051	0.11	< 0.0100
(81-E1 UMWS) 17-WM	10/30/2014	1410e28-001		< 0.0010	< 0.010	0.5		< 0.0020	061	000000	< 0.0060	3.7	0.0071	88	4.8	< 0.00020	0.011	4.6	< 0.10	< 0.0050	340	< 0.050	< 0.010	< 0.0010	1.6	< 0.0020	< 0.0020	190	0.0074	0.017	33	0.021	00	7.0	20000	20.0	0.0	T,	< 0.0050	050	0.062	< 0.0100
Units				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ma/l	ma/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Source				(2)	(2)	(3)	(2)	(5)	(0)	2 6	9(6	(3)	(2)		(3)	(3)	(4)		(3)	(3)		(4)	ල (96	(2)	(2)	(2)		(3)	(3)	4	(2)	5	£ 6	2 ((†	()	9	(4)	(4)) ල	(3)
Screening Levels				900'0	0.01	1	0.004	0.005	30.0	0.03	0.05	-	0.015		0.2	0.002	0.372		0.05	0.05		0.0631	10	0.006	2	0.004	0.005		0.05	0.05	13.800	0.015	- 0000	2.020	0.002	0.012	20.0	0.05	0.0812	0.0631	10	0.2
Analytes	Sample Date	Laboratory ID	Metals	Antimony (dissolved)	Arsenic (dissolved)	Barium (dissolved)	Beryllium (dissolved)	Cadmium (dissolved)	Calcium, Dissolved	Chromium (total) (dissolved)	Cobalt (dissolved)	Iron Dissolved	Lead (dissolved)	Magnesium, Dissolved	Manganese, Dissolved	Mercury (dissolved)	Nickel (dissolved)	Potassium, Dissolved	Selenium (dissolved)	Silver (dissolved)	Sodium, Dissolved	Vanadium (dissolved)	Zinc (dissolved)	Antimony (total) Arsenic (fotal)	Barium (total)	Beryllium (total)	Cadmium (total)	Calcium (total)	Chromium (total) (unfiltered)	Cobalt (total)	Iron, Total	Lead (total)	Magnesium (total)	Manganese (lotal)	Nielculy (total)	Nickel (lotal)	Potassium (total)	Selenium (total)	Silver (total)	Sodium (total) Vanadium (total)	Zinc (total)	Cyanide

Table 7 Groundwater Analytical Results Summary Bloomfield Refinery - Bloomfield, New Mexico

		_	_	_	_	_	_	_	_	_		-		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	_		_		-	-	_	_	_		_	_
(E1-E1 UMW2) 97-WM											240	2					34				120					200				1000	989														
		< 10	< 10	< 20	v 10	× 10	v 10	× 10	v 10	202 >	01.v	< 20	< 10	< 10	< 10	< 10		< 10	< 10	< 10		< 20	< 100	v 10	< 100		2 10	< 10	> 100	00L >	/ 10	4 10	100	30	4 100	4 10	4 10	< 20	< 10	< 30	< 10	< 10	v 10	v 10	< 10
(E1-E1 UMW2) 97-WM											250											_	_			200				720	150									_					
		< 20	< 50	< 100	× 20	× 20	× 20	× 20	< 50	× 100	00 >	< 100	< 50	< 50	< 20	< 50	< 20	< 20	< 20	< 20	< 200	< 100	< 500	< 20	< 200	í	× 20	< 20	< 500)0c >	V 50	250	220	< 150	< 500	< 50	< 50	v 100	< 50	< 150	< 20	< 20	< 50	200	< 20
(310	2					81													7000	1 000														
(21-E1 UMWS) 27-WM		< 20	< 20	< 100	< 50	< 20	< 20	> 20	< 20	v 100	00 >	< 100	< 50	< 50	< 20	< 50		< 20	< 20	< 20	< 200	< 100	< 200	< 20	> 200	< 200	> 20	< 20	> 200	000 >	V 50	250	200 >	< 150	< 500	< 50	< 50	< 100	< 50	< 150	< 20	< 20	< 20	200	< 20
(21-E1 UMWS) 27-WM											220						53													0000															
		< 20	< 20	< 100	20	> 20	× 20	> 20	< 20	v 100	2 V	× 100	< 20	< 20	< 20	< 20		< 20	< 20	< 20	< 200	< 100	< 500	< 20	< 200	< 200	> 20	< 20	> 200	2000	20	200	200 >	< 150	< 500	< 50	200	v 100	× 20	< 150	< 20	< 20	20 <	200	< 20
(0.01.00000) 51.4400											2000						470													45000	200														
(8-E1 UMWS) 47-WM		< 20	< 20	< 100	< 50	< 20	< 20	> 20	< 20	v 100	000	< 100	< 20	< 50	< 20	< 50		< 20	< 20	< 20	< 200	< 100	< 500	< 50	> 200	< 200	> 20	< 20	> 200	0000	V 50	250	< 50	< 150	< 500	< 50	< 50	< 100	< 20	< 150	< 20	< 20	< 50	> 20	< 20
(T1-E1 UMWS) ET-WM											570	5					190									110				0030	2000														
(ZV EV TIMING) EZ MIN		< 20	< 20	< 40	× 50	< 20	< 20	< 20	< 20	40	07 >	< 40	< 20	< 20	15 < 20	< 20		< 20	< 20	< 20	08 >	< 40	< 200	< 20	< 200	ć	< 20	< 20	< 200	200		02 >	202 >	9 2	200	< 20	20 >	40	< 20	09 >	< 20	< 20	< 20	202 ×	< 20
(T1-E1 UMW2) ET-WM											580	8			15		140				47				i	81				4400	2														
		< 10	< 10	< 20	v 10	< 10	< 10	< 10	× 10	< 20	2.0	< 20	< 10	< 10		< 10		< 10	< 10	< 10		< 20	< 100	v 10	< 100	,	v 10	< 10	< 100	00L >	7 10	10	10	30	< 100	4 10	; e	× 20	< 10	< 30	< 10	< 10	< 10	2 5	< 10
(81-81 UMWS) 27-WM											430						130													2000	9														
(SP CP TIMING) SE NIN		< 20	< 50	< 100	< 50	< 50	< 20	< 50	< 50	00L >	00 >	< 100	< 50	< 50	< 20	< 50		< 20	e 50	< 20	< 200	< 100	< 500	< 50	< 200	< 200	> 20	< 50	> 200	2000	05 /	200	200	< 150	2005 >	< 50	< 50	< 100	< 20	< 150	< 20	< 20	< 50	200	< 20
(81-E1 UMWS) 27-WM											440	2					110													0030	3														
(SF CF HWW(S) 02 MW		< 20	< 20	< 40	× 50	< 20	< 20	< 20	< 20	× 40		< 40	< 20	< 20	< 20	< 20	L	< 20	< 20	< 20	< 80	< 40	< 200	< 20	< 200	80 0	< 20	< 20	< 200	> 200	/ 20	200	200	9 2	200	< 20	20 4	49	< 20	9 >	< 20	< 20	< 20	< 20	< 20
(81-E1 UMW2) 17-WM											2100						450													47000	3														
(OF CFTINING) P2 Mile		< 20	< 50	< 100	< 50	< 20	< 20	< 20	< 50	v 100	00 >	< 100	< 50	< 20	< 20	< 20		< 20	< 20	< 20	< 200	< 100	< 500	< 50	< 200	< 200	< 20	< 20	< 200	0000>	V 50	250	< 50	< 150	< 500	< 50	< 50	< 100	< 50	< 150	< 20	< 20	< 20	< 20	< 20
Units		hg/L	hg/L	hg/L	lg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	na/L	ng/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	19/L	10/1	10/1	10/1	10/1	1/2/1	na/L	ng/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L
								_											1 (_																	
Source	_[4	(3)	(3)	(2)	9	(3)	+		4 6	(Z) (E	(2)	(2)	(2)	(2)	(2)	(1)		(1	(2)	(1)		4)	€	1	£ (\$	E	+	-	4 6) E	4	5 5	4	. 4	2	<u>)</u> (0	<u>(</u>	(3)	4	(2)	(4)	4	7	(4)
Screening Levels	lethod 826	5.72	09	10	2	25	2		- 000	0.00/4/	15	0.2	0.02	009	2	2	12		730	75	2.3		2560	730	,	150	2600			14100	200	134	5 2	7.54	810	2 2	100	20900	100	20.3	20	4.7	1.68	370	197
	(EPA N				1					l	t	T														1	1			\dagger							t	t	T		H		†	†	٦
	- spunc	е		е								pane	<u> </u>		·																														
Analytes	Comp	roethan	ane	roethan	ane	e	e	eue	Jzene	pane	nzene	loropro	e (EDE	ene	ne (EDC	ane	nzene	ene	ane	ene	ene	ane				ene		Ф	none			thane	2			ride	3					opene	thane	-	ethane
An	rganic	trachlo	loroeth	trachlo	loroeth	roethar	roether	roprope	lorobe	loropro	athylhe	10-3-ch	noethar	robenza	roethar	ropropa	ethylbe	robenza	ropropa	robenz	aphthal	ropropa	Ф	luene	ЭС	aphtha	luene	Itoluen	-penta		2000	lorome		hane	Hide	trachlo	zene	ane	_	hane	ببا	hloropi	lorome	ethane	luorom
	Volatile Organic Compounds - (EP	,1,1,2-Tetrachloroethane	,1,1-Trichloroethane	,1,2,2-Tetrachloroethane	,1,2-Trichloroethane	,1-Dichloroethane	,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	,3-Irich	1,2,4-1 richiorobenzene 1 2 4-Trimethylbenzene	2-Dibromo-3-chloropropane	1,2-Dibromoethane (EDB)	1,2-Dichlorobenzene	,2-Dichloroethane (EDC)	1,2-Dichloropropane	1,3,5-Trimethylbenzene	,3-Dichlorobenzene	3-Dichloropropane	1,4-Dichlorobenzene	I-Methylnaphthalene	2,2-Dichloropropane	2-Butanone	2-Chlorotoluene	2-Hexanone	2-Methylnaphthalene	4-Chlorotoluene	4-IsopropyItoluene	4-Methyl-2-pentanone	Acetone	Bromohenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-DCE	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane
	9	1,	1,1	1,1	<u>_</u> ,	1,1	<u>,</u>	1,1	1,2	7, 7	, , ,	12	1,2	1,2	1,2	1,2	1,3	1,3	1,3	1,4	1-	2,2	2-B	5-C	2-F	2 .	4 ا	4-1	4 ∙	A A		, E	1 E	, E	Č	S C	S	S	Ch	S	cis-	cis		ב ב	Dic

Table 7 Groundwater Analytical Results Summary Bloomfield Refinery - Bloomfield, New Mexico

	420	П	65	45		250	2	4 €	2		П	Ť	T	Ì	Ì	Ī	41	1	П	7	T	110	2	T	П	7	T	T	Τ	Ī	130	П	П	٦	7	T	T	T	T	Τ	Ī	П	П	٦
(E1-E1 UMW2) 3T-WN		< 10			< 30		30		10	< 10	< 10	10	v 10	0 10	5 5	< 10	:		10	< 10	× 10	2	10	10	< 20	10	50	v 10	× 10 × 10	< 10		< 10	< 10	10	< 10	< 10	2 6	7 10	< 10	< 10	< 10	< 10	< 10	< 10
	210		78	H		280	_	25	V	V	٧	٧	v '	۷۱	۱ ۱	/ V	+		٧	٧	V	v G		v	٧	٧	٧	v '	/ V	v	36	٧	٧	٧	v	v ,	٧Ņ	/ \	/ V	v	V	٧	٧	٧
(E1-E1 UMW2) 87-WW				0:	< 150		< 150		0	0.0	0:	0				0	5		0	0	0			0	0;	0	0	0	0	0		0	0	0	0	0			0	0	0	0	0	0
		< 20	69					5	/ V	۷	< 20	0	v	v 1	/ 1	/ V	0 < 7		۸	٧	v 10			v 10	۷	16 < 10	۸,	v 10	v 10	v	80	< 10	٧	۷	v	v 10	v í	1 10	/ v	v 10	< 10	< 10	< 10	٧
(21-E1 UMW2) 27-WN	280		9			170													0			57			0							0	0	0								0	0	0
	L	< 20			< 150		0CL >		20 >	> 20		i	v 2	v v	۶ ۷ ۱	20 2	L		< 10	< 10	v 10	2	v 10	۰ ۲	< 20		< 20	v 10	v v	v 10	L	< 10	< 10	< 10	<u>م</u> 10	v 10	v 7	1 1	4 10	· 1	< 10	< 10	۷,	< 10
(21-£1 UMW2) 27-WM			84	22		180		(3				100					970					40									20													
		< 50			< 150	,	V 150	7 50	> 50	< 50	< 50	i.	200	200	2 2	20 2			< 10	4 10	v 19	2	4 10	< 10	< 20	4 10	< 20	× 10	× 10	< 10		< 10	< 10	< 10	v 10	v 19	2 6	101	4 10	< 10	< 10	< 10	< 10	< 10
(8-E1 UMWS) 47-WM	2400		150	840		420	040	310				12000					9400					78				13					120	78				20								
(3 CV TINNING) VZ MIN		< 20			< 150		2 L >0		< 50	< 20			000	× 20	7 20	< 50			< 10	< 10	v 10	2		< 10	< 20		< 20	v 10	v 10	< 10			< 10	< 10	<u>1</u> 0	4	0 00	7 10	v 10	< 10	< 10	< 10	< 10	< 10
	370		30	100		220	ć	74				140					2600					26	5			15					7.7													
(T1-E1 UMW2) ET-WN		< 20			09 >	0	09 >	00 /	< 20	< 20	< 20	6	02.5	02 >	200	< 20	ì		< 10	< 10	v 10	0.0	< 10	< 10	< 20		< 20	2,0	< 10	< 10		< 10	< 10	< 10	< 10	< 10	2 0	710	× 10	< 10	< 10	< 10	< 10	< 10
	680		63	120		220	0	S S			П	410					2500					48				14					63				T									٦
(T1-E1 UMW2) ET-WN		< 10			< 30		20	40	10	< 10			2 0	0 0	100	× 10			< 10	< 10	× 10	0.0	10	10	< 20		< 20	× 10	10	< 10		< 10	< 10	< 10	< 10	< 10	0 00	7 10	10	< 10	< 10	< 10	< 10	< 10
	870		92			190		120	Ť	Ť	Ť	İ	Ϊ	Τ	Τ	Τ	300		Ť	Ť	Ť	46		Ť	Ħ	23	Ť	Ť	Τ	ľ	69	12	Ť	Ì	Ť	Ť	Τ	Т	Ť	Ť	Ť	Ť	Ť	Ť
(81-E1 UMW2) 27-WN		< 50		< 20	< 150		061 >		50	20	< 50	20	20	20	20 20	20			10	< 10	< 10	0.	10	10	< 20		< 20	01 >	10	< 10			< 10	10	< 10	< 10	2 6	7 10	10	< 10	10	< 10	< 10	< 10
	200	٧	20	36 <		210		140	/ V	٧	٧	32	v '	۷۱	۷ ۱	/ V	200		٧	٧	V	ν 74		v	٧	24	V	v '	/ V	V	29	Н	٧	٧	V	v '	۷Ņ	1	/ V	v	٧	٧	٧	٧
(81-E1 UMW2) 27-WN		< 20	-		09 >		09 >		20	20	< 20		02 02	20	2 2	< 20	-		< 10	10	× 10			< 10	20		< 20	× 10	< 10	< 10		< 10	10	10	10	< 10	2 6	10	10	10	10	< 10	< 10	< 10
			요	8		240			/ v	v	٧	9	v ·	٧Ì	/\	/ v	9		٧	٧	v			v	٧	+	v	v '	/ V	v		٧	٧	٧	v	v ·	v i	/\	/ v	v	v	٧	٧	v
(81-E1 UMW2) 17-WN		< 50	140	1200	< 150		< 150	, FO	20	< 50		12000	000	20	202	< 50	12000		< 10	< 10	× 10	020	< 10	< 10	< 20	10	< 20	× 10	× 10	< 10	1600	< 10	< 10	< 10	< 10	< 10	0 0	10	< 10	< 10	< 10	< 10	< 10	< 10
	╁	٧	\dashv	Н	٧	+	v	١	/ v	٧	٧	+	V	۷۱	/ \	/ V	╁		٧	٧	V	v	٧	v	٧	٧	٧	v '	/ V	v	H	٧	٧	٧	٧	v '	v i	/\	/ v	v	٧	٧	٧	٧
Units	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	Hg/L	hg/L	hg/L	hg/L	hg/L	Hg/L	1/6/L	10/L	hg/L		hg/L	hg/L	hg/L	Hg/L	7 /bi	nd/L	hg/L	hg/L	hg/L	hg/L	Hg/L	na/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	hg/L	7/61 1/01	Hay L	Hg/L	hg/L	hg/L	hg/L	hg/L
201000	100	(4)	(4)	£	(5	(4)	\downarrow	+	(2)	Ļ	(2)	<u>@ ;</u>	2) =	5 (4	(4)	3 (1) @		(;	<u>()</u>	4	(7)	12	(4)	(4)	((4)	<u> </u>	£ (4	1=	Ĺ	(1)	1	4	(4)	Ē	5	1	\downarrow	(1)	Ļ		Ц	£
Source) (Y	7)	7	(4)	(2)	7	t	\dagger	3	1	Ž	<u>ات</u>	7 5	4) €	45	96	9		(2)	(2)	É	315	. 4	14	7	4	۷)	4) (7	4	ت	ت	ت		2	<u> </u>	15	4	t	٥	1	(1)		4
Screening	700	2.95	447	143	2	1.65			100		2	750	100	., π	1140	-	620	10d 8270)	20	009	- 12	0 %	1170	11.9	45.3	354	38.8	2.37	733	91	150	1800	110		1.24	180	4 E4	0.		0.34		3.4		535
Analytes	Ethylbenzene	Hexachlorobutadiene	sopropylbenzene (Cumene)	Methyl tert-butyl ether (MTBE)	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene (PCE)	Toluene	trans-1,Z-DCE	trans-1,3-Dichloropropene	Frichloroff Local State	/invl chloride		Organics - (EPA Met	,2,4-Trichlorobenzene	1,2-Dichlorobenzene	,3-Dichlorobenzene	I,4-Dicnioropenzene	2.4.5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Unitrotoluene	2-Chlomaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3+4-Methylphenol	A 6 Divites 2 mothylobosol	4.8-cmmorbenyl phenyl other	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Nitroaniline	4-Nitrophenol	Acenaphthene

Table 7 Groundwater Analytical Results Summary Bloomfield Refinery - Bloomfield, New Mexico

				3-18	3-16	3-16	Z I - E	Z1-8	3-2	3-18	31-8	3-13	3-13
				I NWMS	I UMWS	I NWWS	I NWMS	I NWWS	ı nwws	I NWWS	I UMWS	I NWWS	I NWMS
Analytes	Screening Levels	Source	Units	8) 17-WM	8) ST-WM	g) ST-WM	8) ET-WM	8) ET-WM) 47-WM	S)	s) 87-WM	8) 9Y-WM	8) 9Y-WM
Acenaphthylene			hg/L		< 10	< 10			< 10	< 10	< 10		
	12	(1)	hg/L	< 10		32	28 < 10	< 10	< 10	1	0	20 < 10	< 10
	1720	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	0.12	9	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benz(a)anthracene	0.343	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	0.2	(2)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzo(b)fluoranthene	0.343	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzo(g,h,i)perylene			hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzo(k)fluoranthene	3.43	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	2.95	(1)	hg/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	18000	(1)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Bis(2-chloroethoxy)methane	110	(1)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Bis(2-chloroethyl)ether	9.76	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Bis(2-chloroisopropyl)ether	9.76	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Bis(2-ethylhexyl)phthalate	9	(2)	hg/L			21 < 10	< 10	< 10	< 10		16 < 10	< 10	< 10
Butyl benzyl phthalate	35	(1)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	-		hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	34.3	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Di-n-butyl phthalate	885	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Di-n-octyl phthalate			hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Dibenz(a,h)anthracene	0.106	9	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	-		hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Diethyl phthalate	14800	9	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Dimethyl phthalate	,	1	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	× 10
	802	(4)	hg/L	× 10	× 10	< 10	× 10	× 10	× 10	< 10	< 10	× 10	× 10
	788	(4)	hg/L		52 < 10	< 10	or >	v 10	< 10	× 10	< 10	× 10	× 10
Hexachlorobenzene	T 00	(7)	hg/L	v 10	v 10	010	0 5	010	× 10	010	0 0	010	0 4
nexacillolobutadierie	2.33	ŧ ć	ηg/L	v 10	0 9	0 0	0 9	0 0	0 7	0 0	0 0	0 0	v 10
peritaglerie	000	(7)	µg/∟	0 5	0 5	0 4	0 4	0 5	0 5	2 2	v 10	V 10	v 10
Hexachioroethane	0.343	£ 5	J/G/I	0 7	0.7	2 2	0.7	0.0	0.70	2 2	2 4	0.7	0 4
2006	622	4] [2]	× 10	× 10	v 10	< 10	v 10	× 10	v 10	v 10	v 10	v 10
	1.65	(4	na/L	1100			130 120	0 140				88	09
N-Nitrosodi-n-propylamine	9600.0	(1)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N-Nitrosodimethylamine	0.00165	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N-Nitrosodiphenylamine	0.0049	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	1.4	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Pentachlorophenol	_	(5)	hg/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	170	9	hg/L				v 10	< 10	< 10	< 10			× 10
	2260	(4)	hg/L	< 10		27			61 41			74	32 < 10
	117	(4)	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	37	Œ	hg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
General Chemistry	:			; ;	;	;	;	;	 -				
Nitrogen, Nitrate (As N)	10	(2)	mg/L	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrogen, Nitrite (As N)	- 60	(7)	mg/L	- 1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	- 1	< 0.50	< 0.50
	000	ଚ ଚ	mg/L	130		47	90 160	230	30 40			64	99
Chloride	750	<u>ල</u>	mg/L	2						280			360
		l			l		l	l					

Groundwater Analytical Results Summary Bloomfield Refinery - Bloomfield, New Mexico Table 7

	_			i	~		_	
(E1-E1 UMW2) 87-WM	1200	0	1200		13	7	5	
		< 5.0					< 2.5	
	1200		1200		6.3	9.1		
(E1-E1 UMW2) 3T-WM		0					2	
	L	< 5.0	L		L	_	< 2.5	
	1200		1200		22	2.9		
(31-E1 UMWS) 37-WM		0.					5.5	
	0	< 2.0	0		19	9.	< 2.5	
(21-61 UMWS) 27-WM	1100		110		`	3		
(37 07 1188813) 32 7888		5.0					< 2.5	
	1200	v	200		80	6.5	V	
(3-E1 UMWS) 47-WM	+		1					
		< 2.0					< 2.5	
	1000		000		20	1.8		
(T1-E1 UMW2) ET-WM		0	Ì				2	С
	С	< 2.0	С		20	33	< 2.5	< 10
(T1-E1 UMWS) ET-WM	1000		1000		2	3.		
(21-21 HMMS) 22-MM		< 2.0					< 2.5	
	000	V	000		23	2.8	٧	
(81-E1 UMWS) 27-WM	7		7					
		< 2.0					< 2.5	
	1100		1100		25	3.3		
(81-E1 UMWS) 27-WM	,	0.	Ì				.5	
	0	< 2.0	0		0	44	< 2.5	
(0. 0. 0)	1100		1100		130	4		
(81-81 UMW2) 17-WM		< 2.0					< 25	
	83	v و	83		H		٧	
Units	mg/L CaCO3	Cacc	mg/L CaCO3		mg/L	mg/L	mg/L	
-	mg/L	mg/L	ng/L		n	п	n	
Source	Ĺ	Ĺ	Ĺ					
ning sls				Method 8015)				ilable
Screening Levels	1	1	1	thod	1	1	1	t ava
σ								resu
				Total Petroleum Hydrocarbons (EPA	((No screening level or analytical result available
				rbon	(GRC	RO)	(MRC	r ana
es			otal Alkalinity (as CaCO3)	droca	Gasoline Range Organics (GRO)	iesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	evelc
Analytes			as C	n Hy	3 Org	rgani	e Org	ning l
•	je Le		inity (oleur	Range	o egu	Range	scree
	icarbonate	arbonate	Alka	Petr	Jine F	el Rai	r Oil I	No
	Bicar	Carb	Total	Tota	Gasc	Diese	Moto	
			-					

450 - No screening level or analytical result available
451 - Solided value exceeds screening level (1) EPA Screening Levels. Tap Water
(1) EPA - Regional Screening Levels (April 2009) - EPA Screening Levels. Tap Water
(2) EPA - Regional Screening Levels (April 2009) - MCL
(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less
(4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)

Table 8 Soil Cumulative Risk and Hazard Index Evaluation Bloomfield Refinery - Bloomfield, New Mexico

	Residential Soil Screening	Non- Residential Soil Screening	Maximum	Maximum Concentration divided by Residential Soil	Maximum Concentration divided by Non- Residential Soil
Analytes	Level	Level	Concentration	Screening Level	Screening Level
CARCINOGENIC CONSTITUENTS					
Metals (mg/kg)					
Arsenic	4.25E+00	2.15E+01	22	5.18E+00	1.02E+00
Chromium	9.66E+01	1.34E+02	60	6.21E-01	4.49E-01
Volatile Organic Compounds - (EPA Method 8					
1-Methylnaphthalene	2.20E+01	9.90E+02	35	1.59E+00	3.54E-02
Benzene	1.78E+01	8.72E+01	9.5	5.34E-01	1.09E-01
Ethylbenzene	7.51E+01	3.68E+02	100	1.33E+00	2.72E-01
Methyl tert-butyl ether (MTBE)	9.75E+02	4.82E+03	0.0047	4.82E-06	9.76E-07
Naphthalene	4.97E+01	1.59E+02	27	5.44E-01	1.70E-01
			total	9.80E+00	2.06E+00
					-
NONCARCINOGENIC CONSTITUENTS					
Metals (mg/kg)					
Barium	1.56E+04	4.35E+03	380	2.44E-02	8.73E-02
Beryllium	1.56E+02	1.48E+02	0.8	5.12E-03	5.40E-03
Cadmium	7.05E+01	7.21E+01	0.46	6.52E-03	6.38E-03
Cobalt	2.30E+01	3.00E+02	7.4	3.22E-01	2.47E-02
Lead	4.00E+02	8.00E+02	26	6.50E-02	3.25E-02
Nickel	1.56E+03	6.19E+03	670	4.30E-01	1.08E-01
Silver	3.91E+02	1.77E+03	0.33	8.44E-04	1.86E-04
Vanadium	3.94E+02	6.14E+02	56	1.42E-01	9.12E-02
Zinc	2.35E+04	1.06E+05	360	1.53E-02	3.39E-03
Mercury	2.38E+01	2.07E+01	5.8	2.44E-01	2.80E-01
Cyanide	1.12E+01	1.21E+01	0.33	2.96E-02	2.73E-02
Volatile Organic Compounds - (EPA Method 8		1			
1,2,4-Trimethylbenzene	6.70E+01	2.80E+02	200	2.99E+00	7.14E-01
1,3,5-Trimethylbenzene	4.70E+01	2.00E+02	67	1.43E+00	3.35E-01
2-Butanone (MEK)	3.74E+04	9.17E+04	0.0959	2.56E-06	1.05E-06
2-Methylnaphthalene	3.10E+02	4.10E+03	57	1.84E-01	1.39E-02
4-Isopropyltoluene	-	- 0.405.05	3.4	0.00E+00	0.00E+00
Acetone	6.63E+04	2.42E+05	0.278	4.19E-06	1.15E-06
Bromomethane	1.77E+01	1.79E+01	0.00585	3.30E-04	3.28E-04
Carbon disulfide	1.55E+03	1.62E+03	0.0191	1.23E-05	1.18E-05
Isopropylbenzene (cumene)	2.36E+03	2.74E+03	12	5.08E-03	4.38E-03
n-Butylbenzene	-	-	16	0.00E+00	0.00E+00
n-Propylbenzene	_	-	46	0.00E+00	0.00E+00
sec-Butylbenzene Toluene	5.23E+03		7 55	0.00E+00 1.05E-02	0.00E+00
Xvlenes. Total	8.71E+02	1.40E+04 7.98E+02	310	1.05E-02 3.56E-01	3.92E-03 3.88E-01
Semi Volatile Organics - (EPA Method 8270) m		/.98E+02	310	3.50E-01	3.88⊏-01
Fluorene	2.32E+03	1.00E+04	1.1	4.75E-04	1.10E-04
Phenanthrene	1.74E+03	7.53E+03	4.3	2.47E-03	5.71E-04
i nenanunene	1.746103	7.55E F05	total	6.25E+00	2.13E+00

⁻ No screening level available

Table 9 Groundwater Cumulative Risk and Hazard Index Evaluation Bloomfield Refinery - Bloomfield, New Mexico

Analytes	Screening Levels	Source	Maximum Concentration	Maximum Concentration divided by Residential Groundwater Screening Level
CARCINOGENIC CONSTITUENTS				
Metals (mg/l)				
Arsenic (total)	1.00E-02	(2)	0.02	2.00E+00
Chromium (total) (unfiltered)	5.00E-02	(3)	0.044	8.80E-01
Volatile Organic Compounds - (EPA Method 8260) ug/l				
1,2-Dichloroethane (EDC)	5.00E+00	(2)	15	3.00E+00
1-Methylnaphthalene	2.30E+00	(1)	120	5.22E+01
Benzene	5.00E+00	(2)	15000	3.00E+03
Ethylbenzene	7.00E+02	(2)	2400	3.43E+00
Methyl tert-butyl ether (MTBE)	1.43E+02	(4)	840	5.87E+00
Naphthalene	1.65E+00	(4)	420	2.55E+02
Semi Volatile Organics - (EPA Method 8270) ug/l				
Bis(2-ethylhexyl)phthalate	6.00E+00	(2)	21	3.50E+00
Carcinogenic Constituents Cumu	ulative Risk x 10	5		3067.36
NON-CARCINOGENIC CONSTITUENTS				
Metals (mg/l)	ı			T
Barium (dissolved)	1.00E+00	(3)	2.1	2.10E+00
Beryllium (total)	4.00E-03	(2)	0.0033	8.25E-01
Cobalt (total)	5.00E-02	(3)	0.021	4.20E-01
Iron, Dissolved	1.00E+00	(4)	9	9.00E+00
Lead (total)	1.50E-02	(2)	0.034	2.27E+00
Manganese (dissolved)	2.00E-01	(4)	4.4	2.20E+01
Nickel (total)	3.72E-01	(4)	0.037	9.95E-02
Selenium (total)	5.00E-02	(3)	0.013	2.60E-01
Vanadium (total)	6.31E-02	(4)	0.066	1.05E+00
Zinc	1.00E+01	(3)	0.57	5.70E-02
Volatile Organic Compounds - (EPA Method 8260) ug/l				
1,2,4-Trimethylbenzene	1.50E+01	(1)	2000	1.33E+02
1,3,5-Trimethylbenzene	1.20E+01	(1)	470	3.92E+01
2-Methylnaphthalene	1.50E+02	(1)	200	1.33E+00
Isopropylbenzene (Cumene)	4.47E+02	(4)	150	3.36E-01
Toluene	7.50E+02	(3)	12000	1.60E+01
Xylenes, Total	6.20E+02	(3)	9400	1.52E+01
Semi Volatile Organics - (EPA Method 8270) ug/l				
2,4-Dimethylphenol	3.54E+02	(4)	24	6.78E-02
2-Methylphenol	1.80E+03	(1)	78	4.33E-02
3+4-Methylphenol	1.80E+02	(1)	20	1.11E-01
Aniline	1.20E+01	(1)	32	2.67E+00
Phenol	5.76E+03	(4)	74	1.28E-02
Non-Carcinogenic Constituent	s Hazard Index			208.23

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

⁽²⁾ EPA - Regional Screening Levels (April 2009) - MCL
(3) NMED WQCC standards - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

⁽⁴⁾ NMED TAP Water Screening Levels - 2014 Risk Assessment Guidance for Site Investigations and Remediation

TABLE 10 Groundwater Field Measurements & Subsurface Vapor Readings Bloomfield Refinery - Bloomfield, New Mexico

				(, ,,,,						
				Ğ	Ground Water Data	Data				Vаро	Vapor Data
Well	Date	Well	Temp (degrees F)	Specific Conductivity (uS/cm)	Dissolved Oxygen (mg/L)	Hď	ORP (mV)	(mdd)	Purge Volume (calculated / actual -	O ₂ (%)	CO ₂ (%)
7 / / / / / / / / / / / / / / / / / / /	7,00/00/04	- c	61.20	2,991	5.59	6.81	-89.5	1928	7007	7	C
	10/20/2014	3	61.16	2,980	6.11	6.80	-93.0	1937	19.3 / 20	<u>+</u>	3.2
		_	63.50	2,557	1.38	69.9	-77.7	1664			
	11/5/2014	2	63.86	2,635	1.58	6.85	-87.3	1716	13.8 / 30	20.9	0.1
72 /////		3	63.50	2,635	1.37	68.9	-82.7	1709.5			
		1	60.980	2,360	1.79	6.72	-54.7	MN			
	12/16/2014	7	62.600	2,527	1.31	6.82	-82.2	MN	13.8 / 14	20.9	0
		3	60.080	2,610	2.94	6.85	-99.8	MN			
		1	64.58	3,116	4.36	7.11	-109.2	2028			
	11/5/2014	2	64.04	3,079	3.28	7.08	-95.9	2002	15.1 / 20	17.4	6.0
MW 73		3	63.86	3,067	3.51	7.07	-91.4	1995.5			
		1	29.900	2,613	2.98	6.85	-39.9	MN			
	12/16/2014	7	60.800	2,537	2.94	6.85	-29.6	MN	15.1 / 16	20.9	0
		3	61.520	2,673	3.25	6.97	-35.5	MN			
		1	65.48	2,792	1.91	6.93	-86.2	1813.5			
MW-74	11/5/2014	2	64.94	2,831	1.73	98.9	-84	1839.5	21.4 / 22	19.1	0.1
		3	64.94	2,823	1.80	6.83	-78.5	1833			
		1	67.82	2,700	1.23	6.95	-79.6	1755			
	11/5/2014	2	67.10	2,868	1.11	96.9	-80.7	1865.5	1.9 / 10	13	2.8
MW/ 75		3	67.28	2,861	1.13	6.97	-81.2	1859			
0 /- 0 /- 0		1	62.960	2,698	1.30	7.03	-82.2	MN			
	12/16/2014	2	64.220	2,786	1.15	6.92	-88.5	ΣN	1.8 / 2	20.9	0
		3	64.940	2,798	1.76	6.91	-90.3	ΣN			

TABLE 10
Groundwater Field Measurements & Subsurface Vapor Readings
Bloomfield Refinery - Bloomfield, New Mexico

Well Date			Glouing Water Data							
	Well	Vell Temp Iume (degrees F)	Specific Conductivity (uS/cm)	Dissolved Oxygen (mg/L)	Hd	ORP (mV)	(mdd)	Purge Volume (calculated / actual -	O ₂ (%)	CO ₂ (%)
	1	64.76	3,274	2.06	92'9	-87.9	2125.5			
11/5/2014	2	64.22	3,298	1.61	6.87	-86.4	2145	11.2 / 25	13.5	2.5
M/// 76	3	64.76	3,314	1.71	68.9	-81.7	2151.5			
0 /- 0 / 0	1	61.160	2,915	1.71	08'9	-98.8	MN			
12/16/2014	1 2	63.320	3,049	1.17	08'9	-114.1	MΝ	11.2 / 12	20.9	0
	3	63.500	3,194	06.0	6.85	-116.0	MN			
	1	63.60	3,048	2.01	6.70	-58.6	1970			
MW-77 10/30/2014	1 2	63.50	3,044	1.55	6.71	-57.5	1976	24.5 / 60	18.9	6.0
	3	63.14	3,008	3.47	6.77	-45.5	1956.5			

NM = not measured

TABLE 11
Water Level Measurements
Bloomfield Refinery - Bloomfield, New Mexico

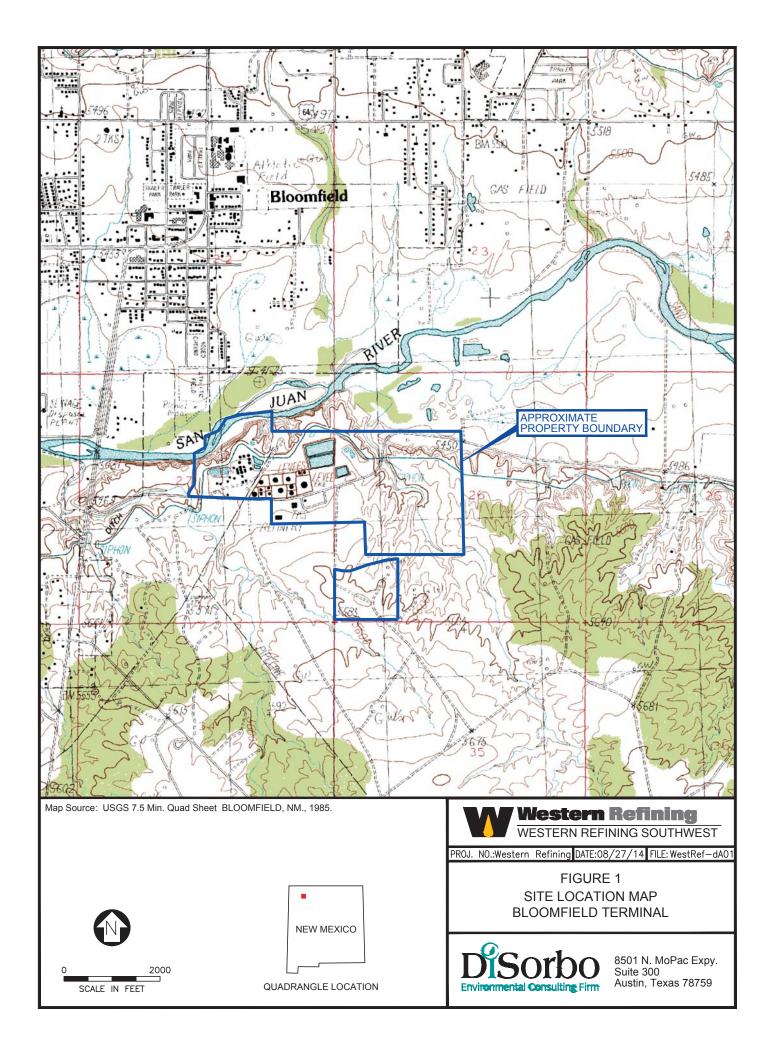
Well	Date	Top of Casing (ft-msl)	Total Well Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Groundwater Elevation (ft-msl)	Product Thickness (ft)
MW-71	10/30/2015	5529.08	38.95	30.18	30.22	5498.89	0.04
	12/15/2014	5529.08	38.95	30.2	30.25	5498.87	0.05
MW-72	11/4/2014	5528.54	34.94	NP	28.69	5499.85	0
	12/15/2014	5528.54	34.94	NP	28.7	5499.84	0
MW-73	11/4/2014	5528.92	36.66	NP	29.8	5499.12	0
	12/15/2014	5528.92	36.66	NP	29.82	5499.1	0
MW-74	11/4/2014	5528.55	33.91	NP	29.15	5499.4	0
	12/15/2014	5528.55	33.91	NP	29.17	5499.38	0
MW-75	11/4/2014	5528.76	32.25	NP	28.38	5500.38	0
	12/15/2014	5528.76	32.25	NP	28.5	5500.26	0
MW-76	11/4/2014	5528.61	34.16	NP	29.09	5499.52	0
	12/15/2014	5528.61	34.16	NP	29.08	5499.53	0
MW-77	10/30/2015	5527.59	34.30	28.81	28.85	5498.77	0.04
	12/15/2014	5527.59	34.30	29.06	29.5	5498.44	0.44

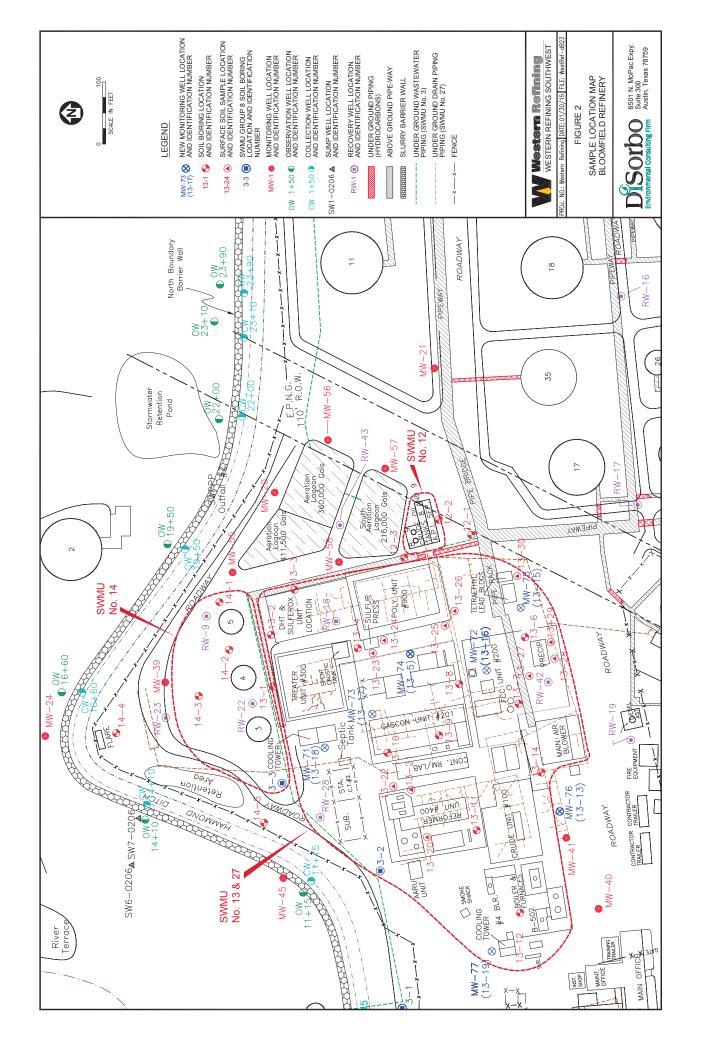
NP - not present

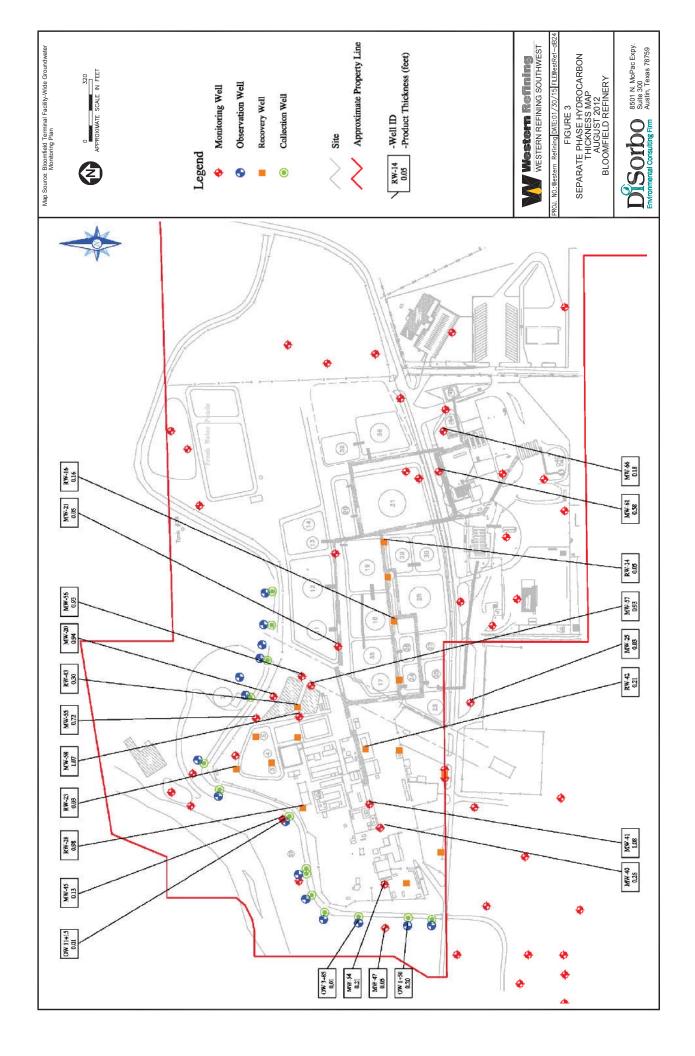
Figures

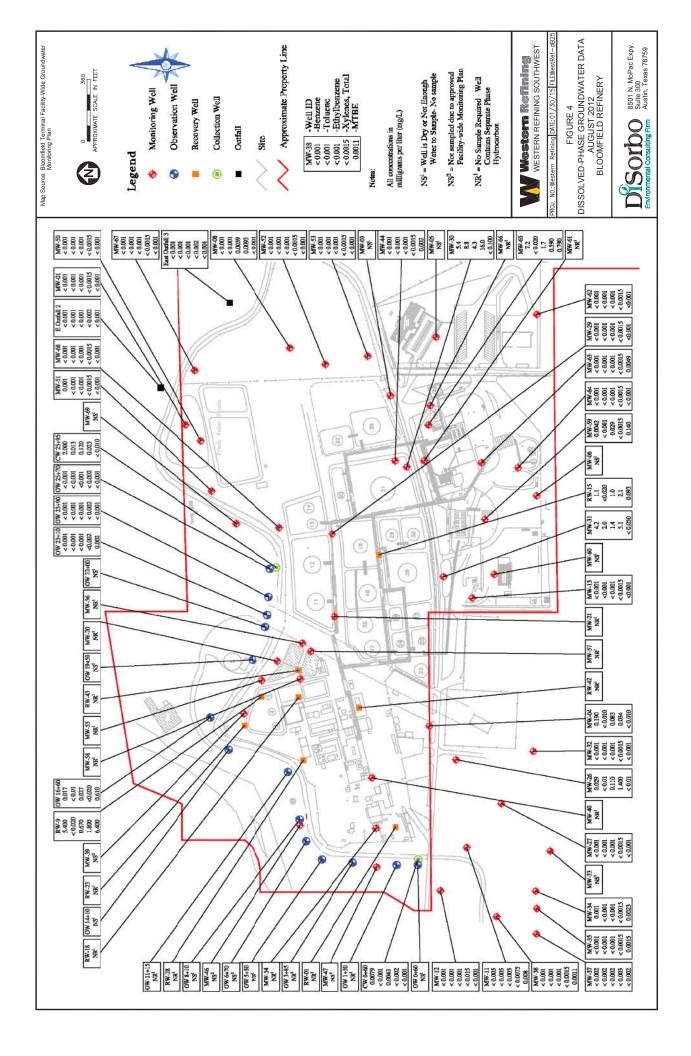
Figure 1	Site Location Map
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Figure 3	Separate-Phase Hydrocarbon Thickness Map August 2012
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Figure 15	1-Methylbenzene Soil Concentrations
Figure 16	2-Methylnaphthalene Soil Concentrations
Figure 17	Benzene Soil Concentrations

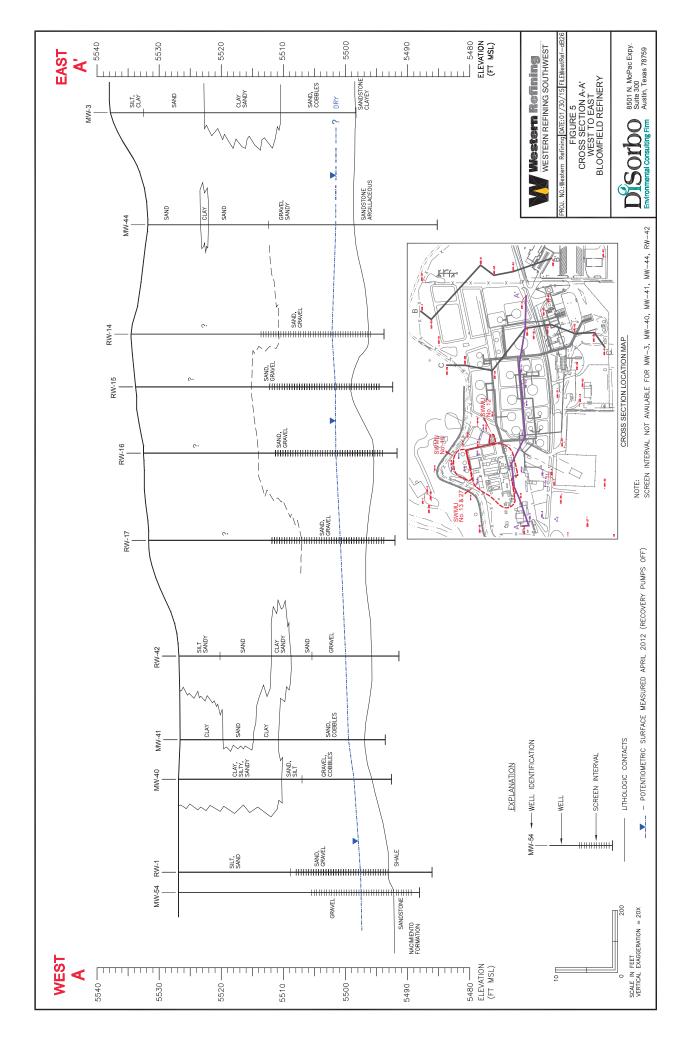
Figure 18	Ethylbenzene Soil Concentrations
Figure 19	Isopropylbenzene (Cumene) Soil Concentrations
Figure 20	Naphthalene Soil Concentrations
Figure 21	Toluene Soil Concentrations
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Figure 28	1-Methylnaphthalene, 2-Methylnaphthalene, and Aniline Groundwater Concentrations
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Figure 31	Bis (2-ethylhexyl) phthalate Groundwater Concentrations
Figure 32	Chloride and Total Dissolved Solids Groundwater Concentrations

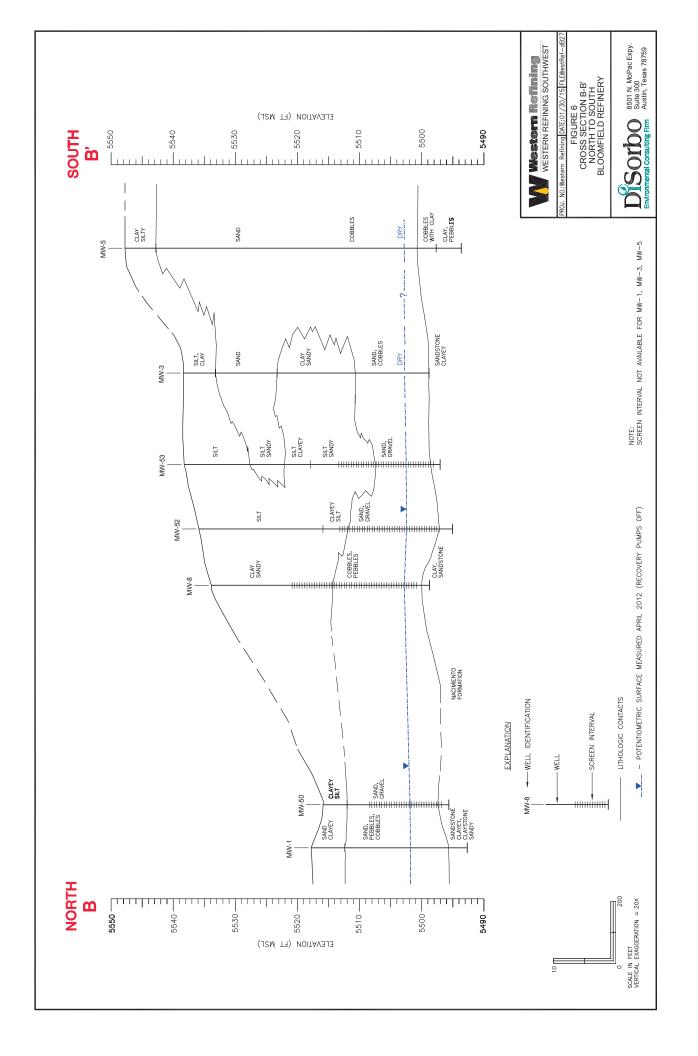


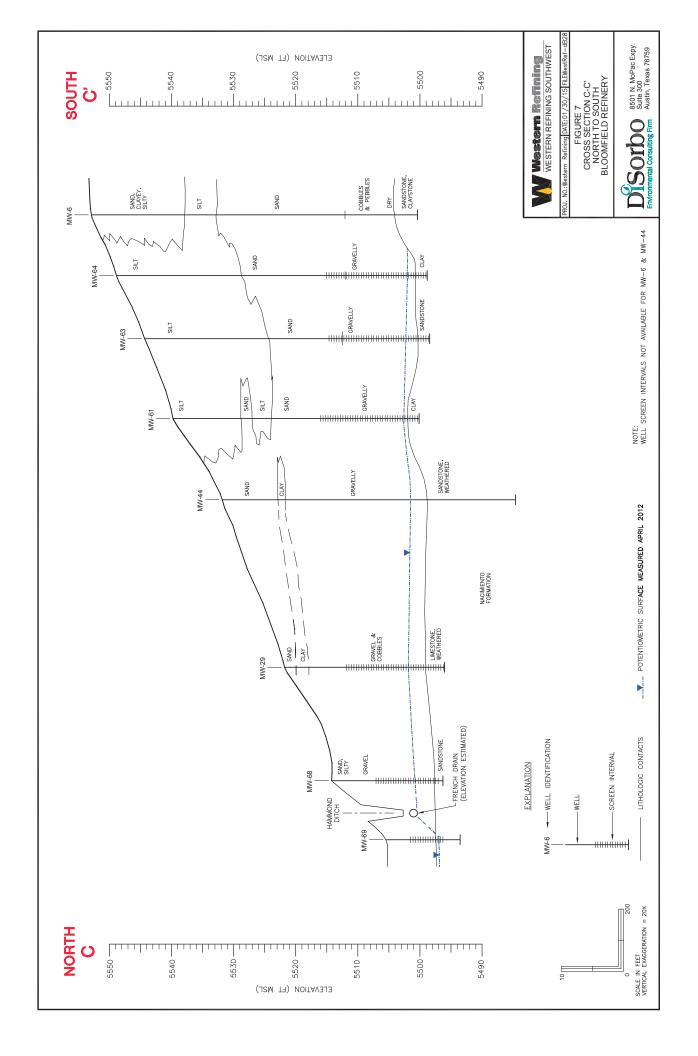


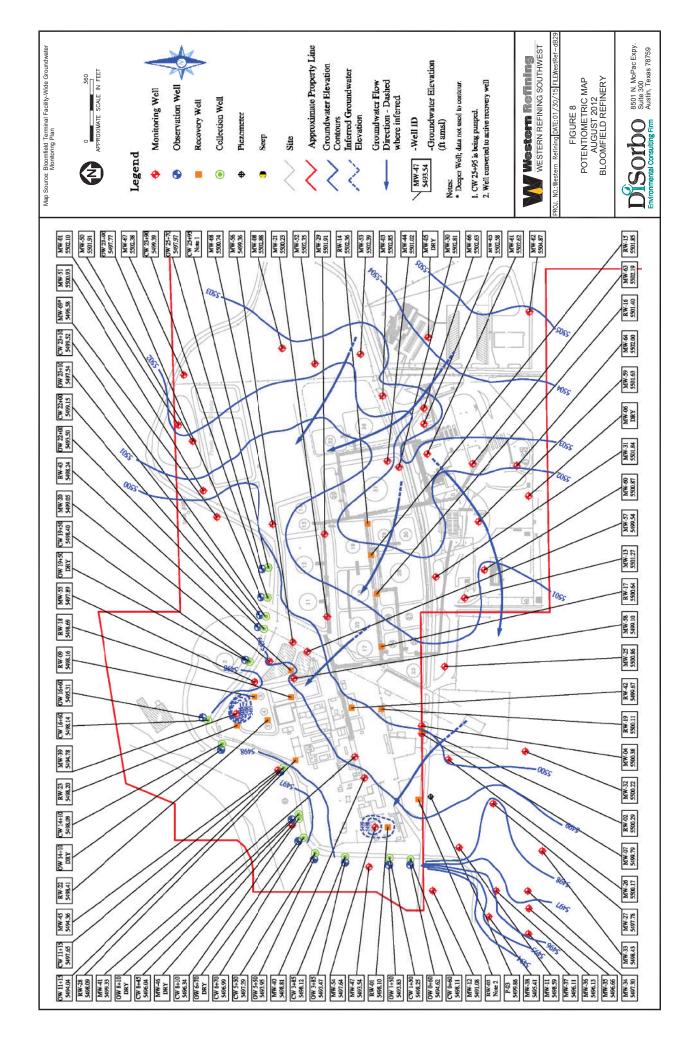


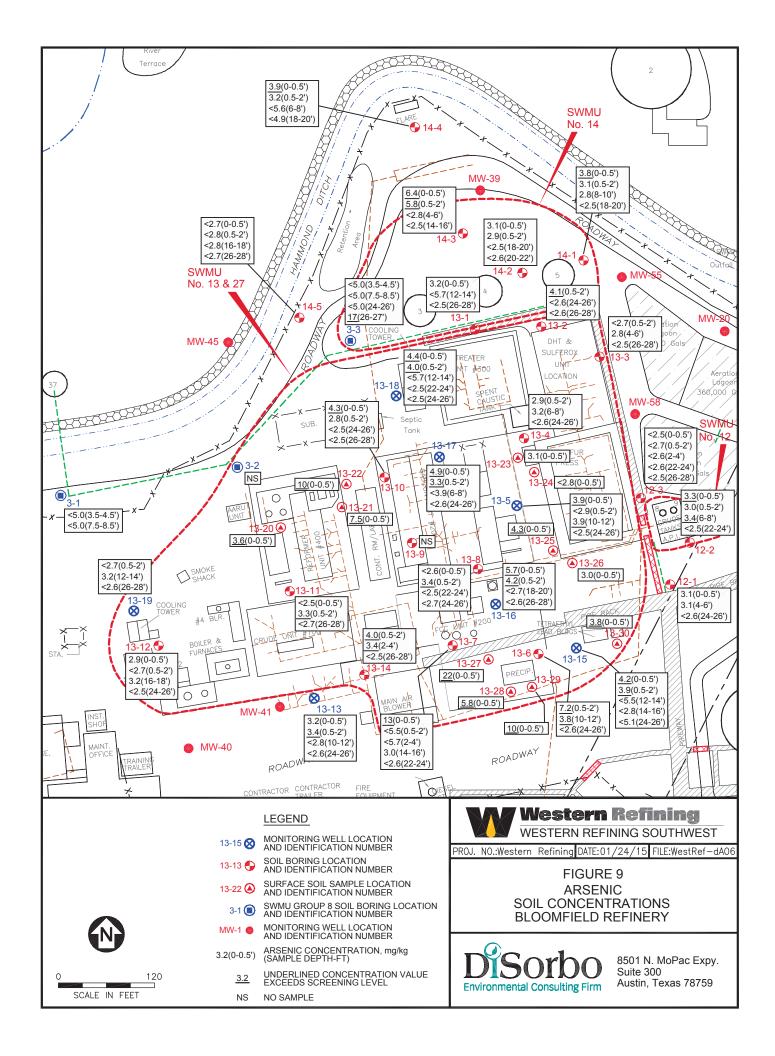


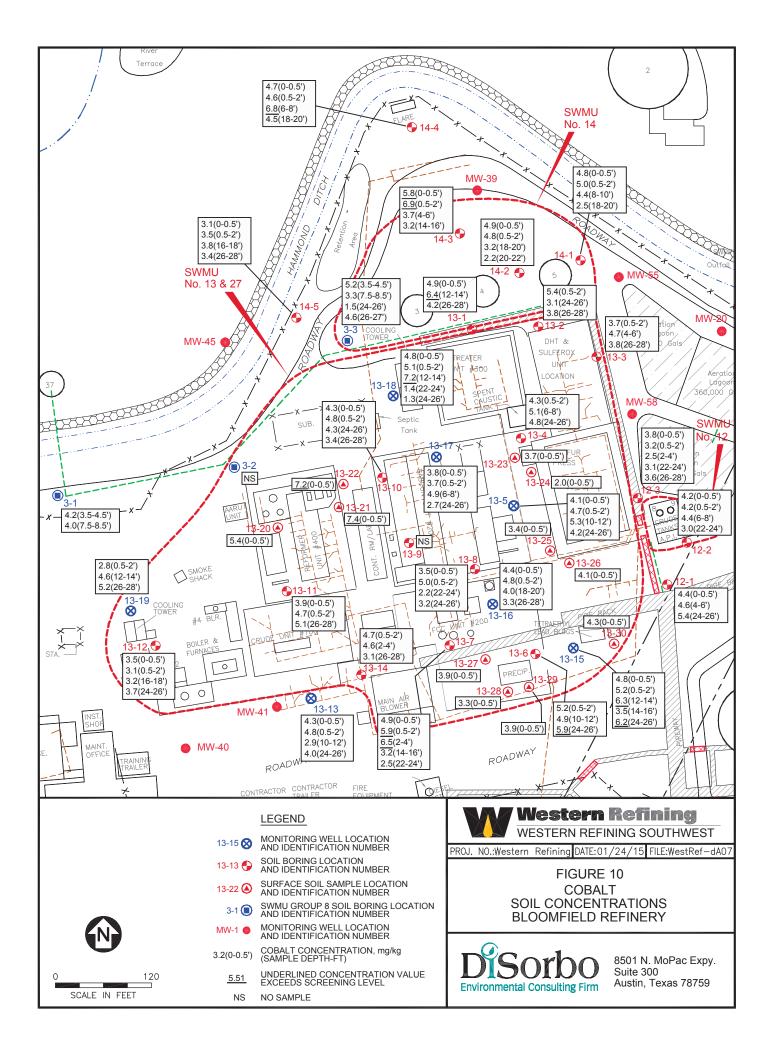


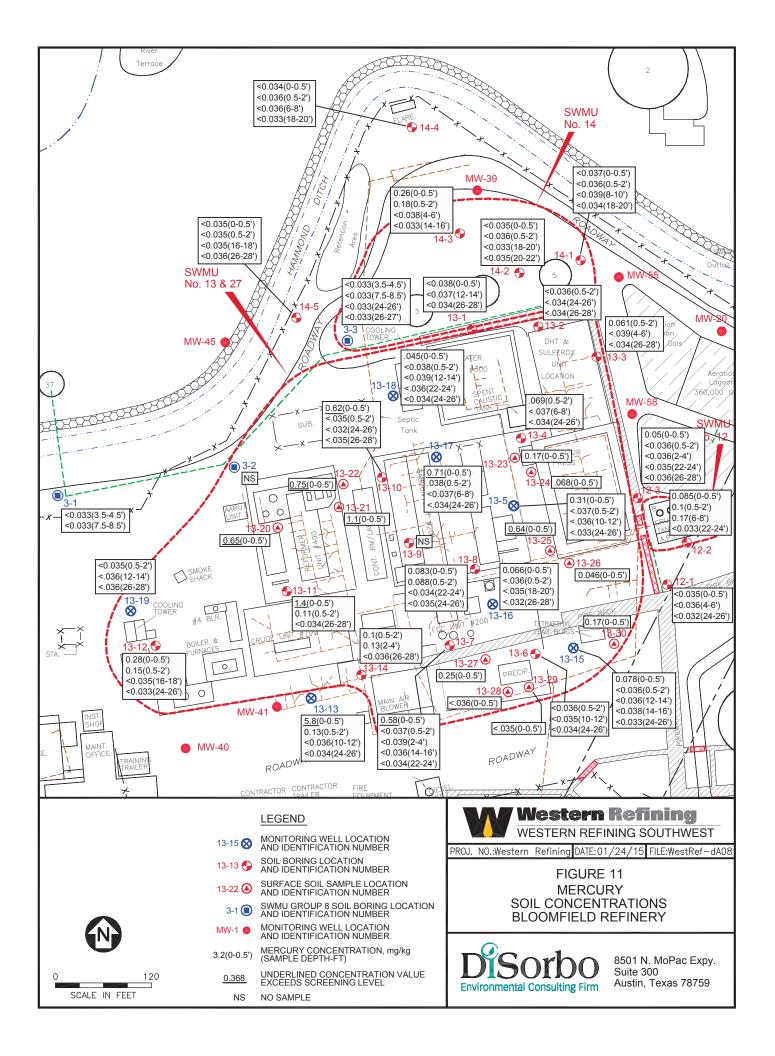


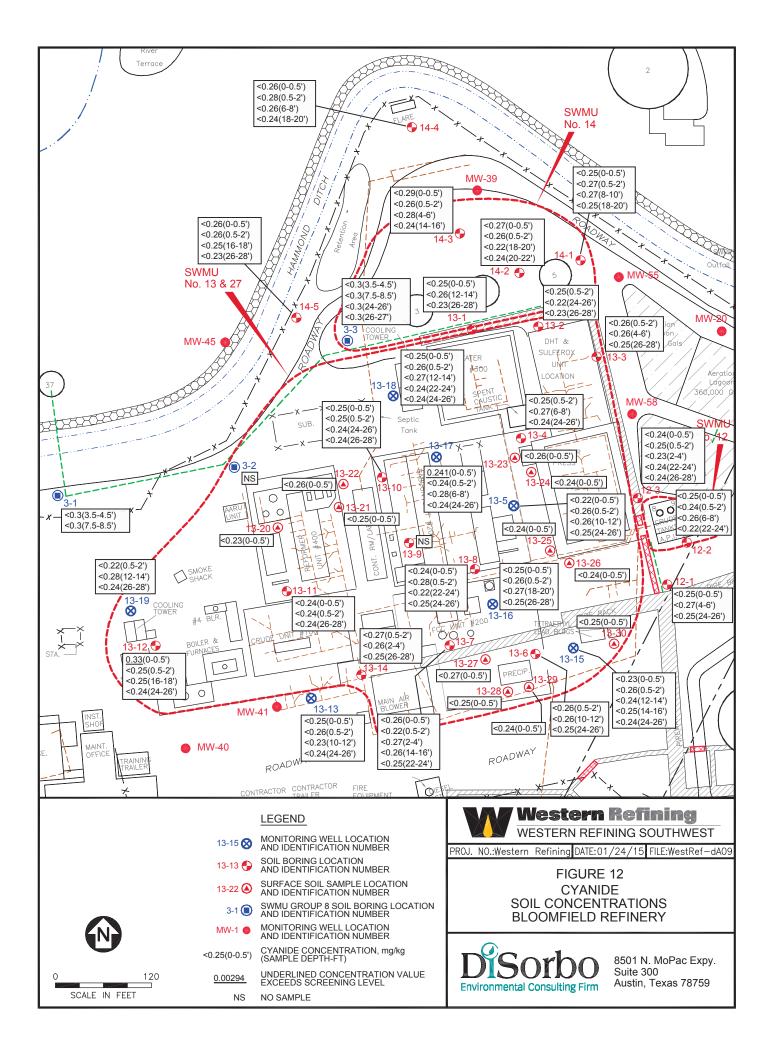


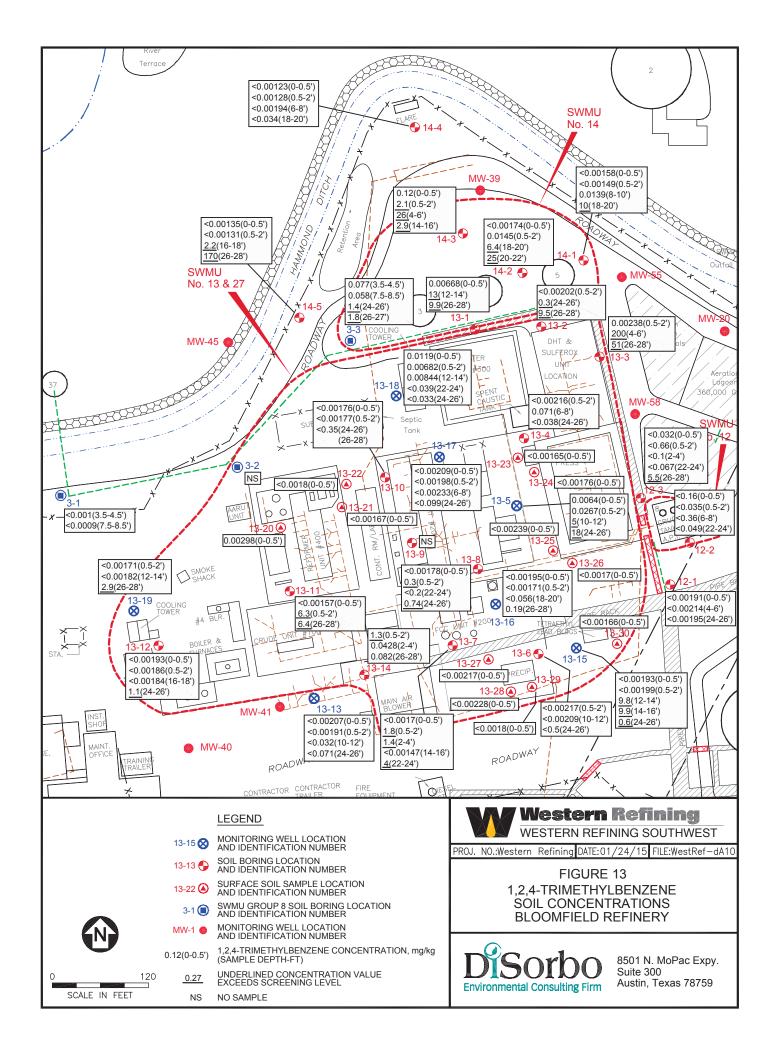


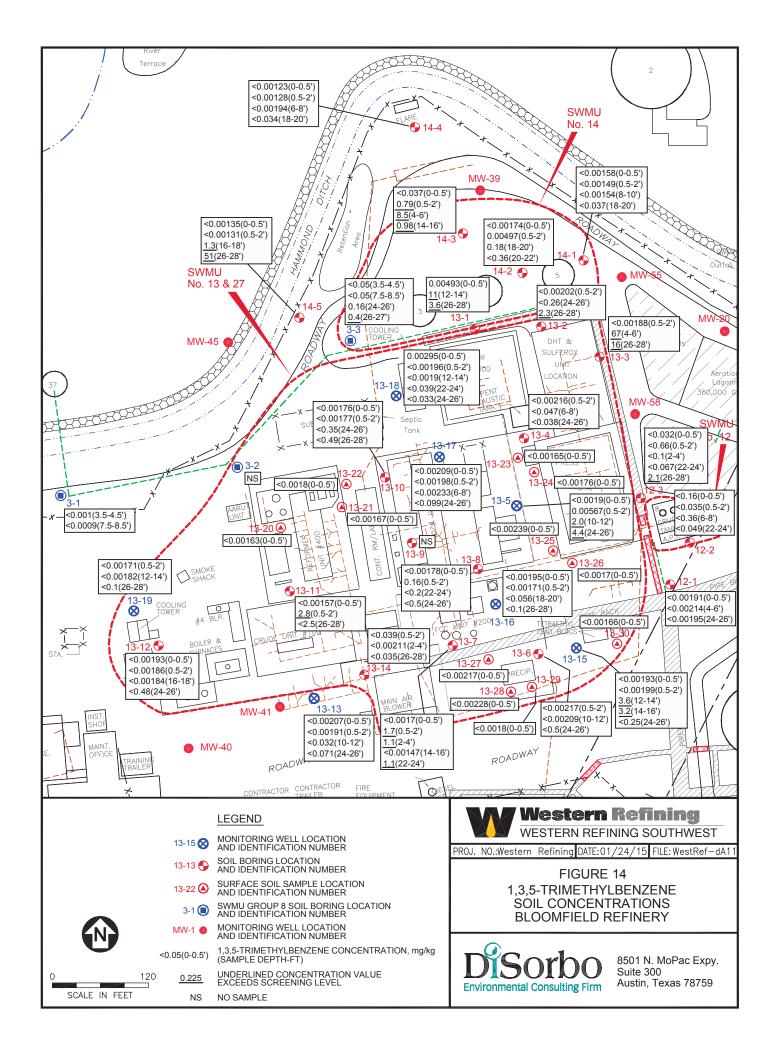


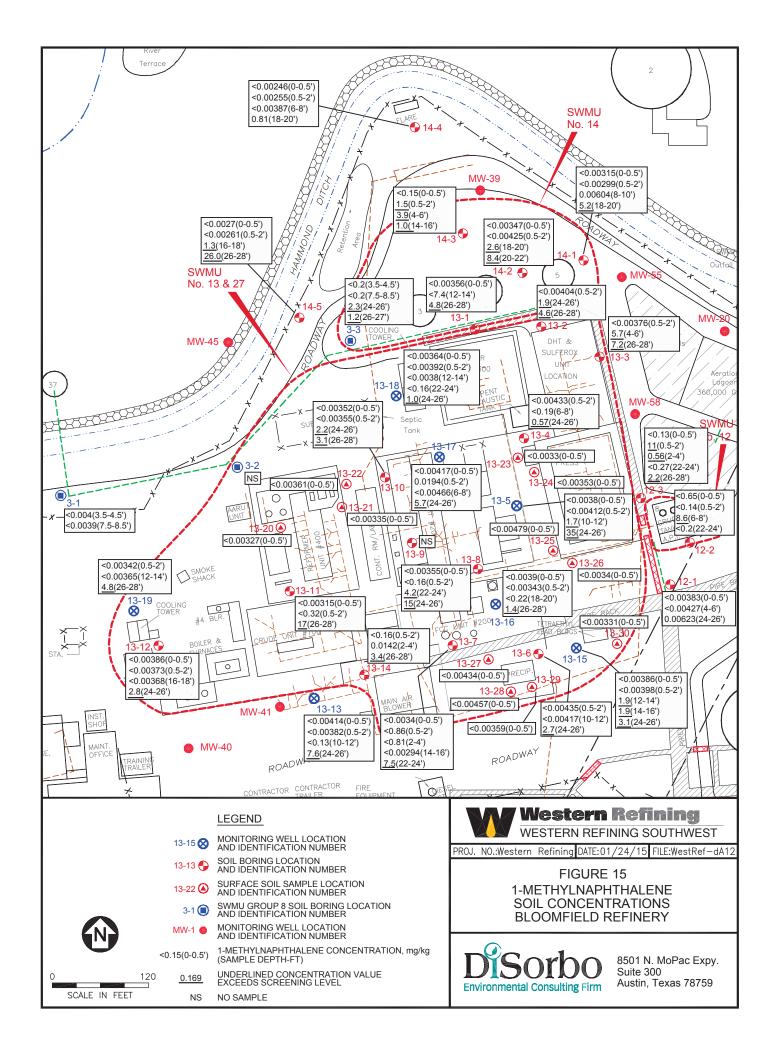


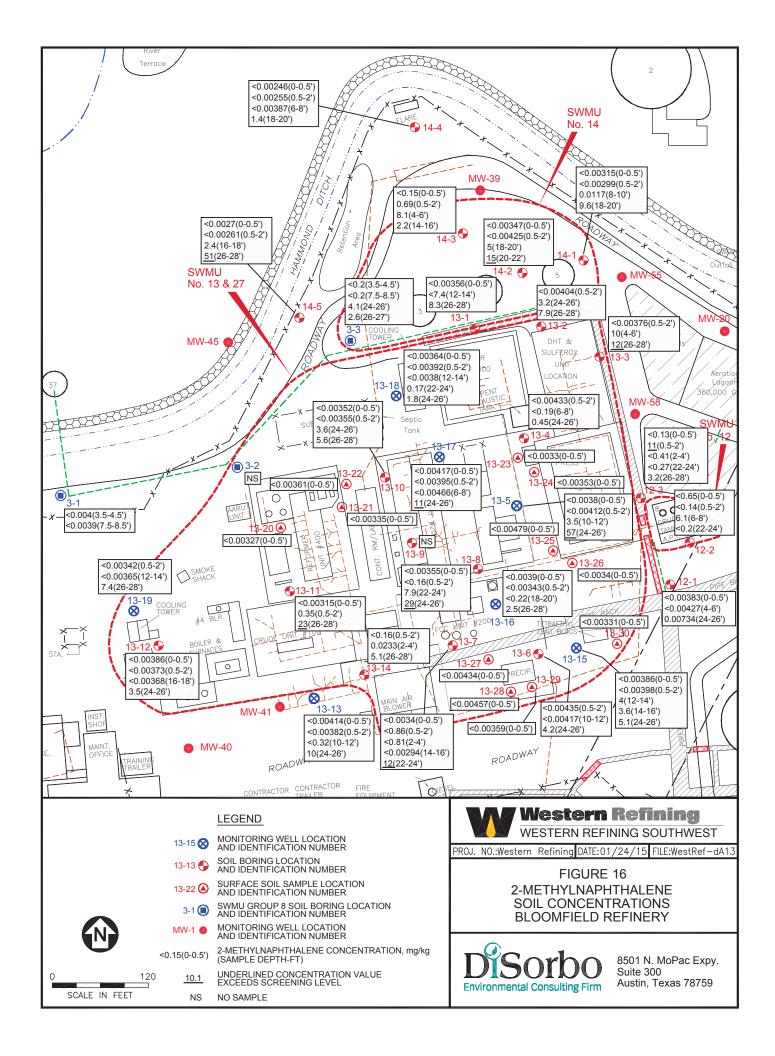


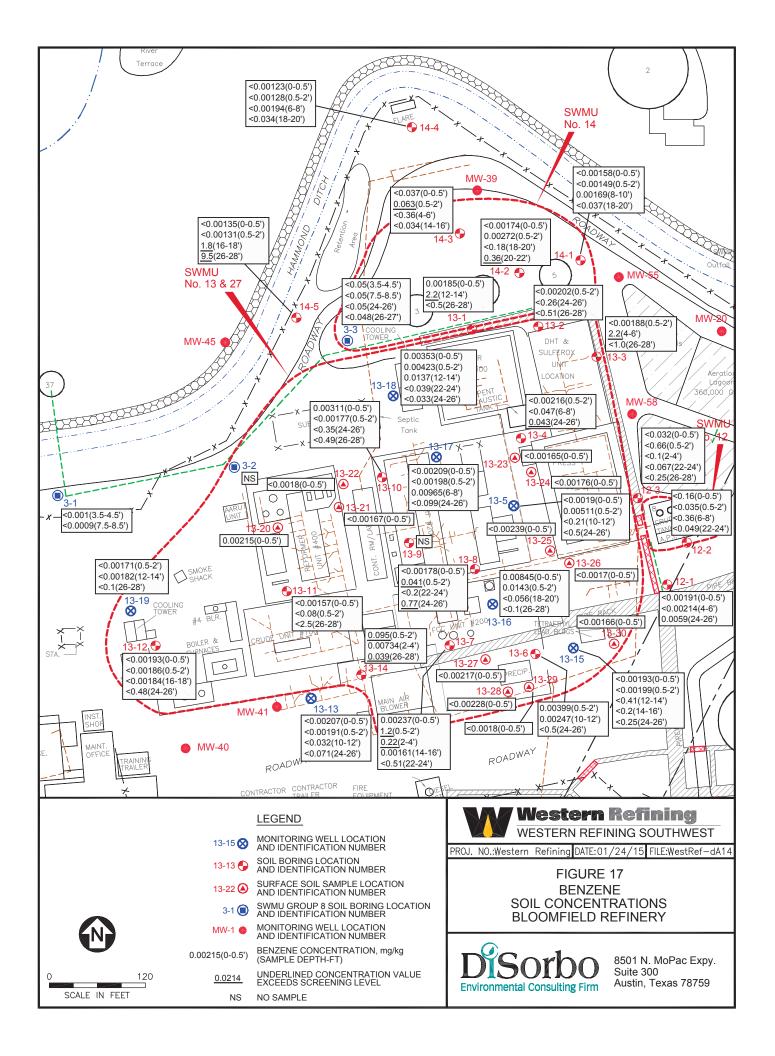


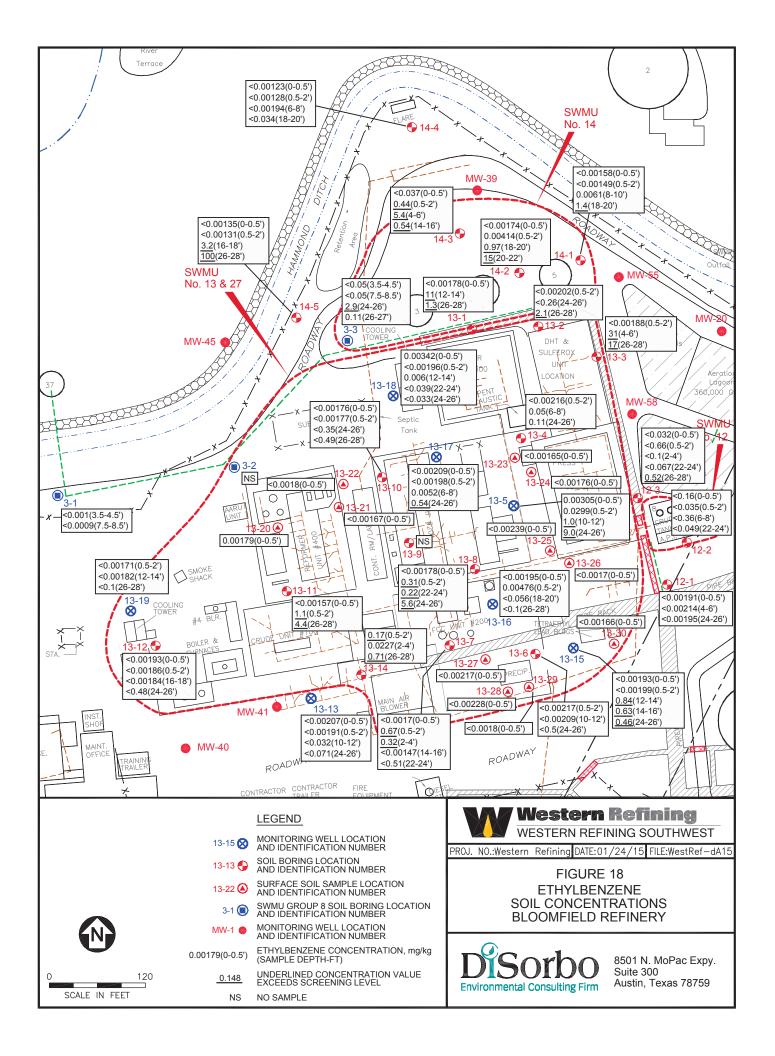


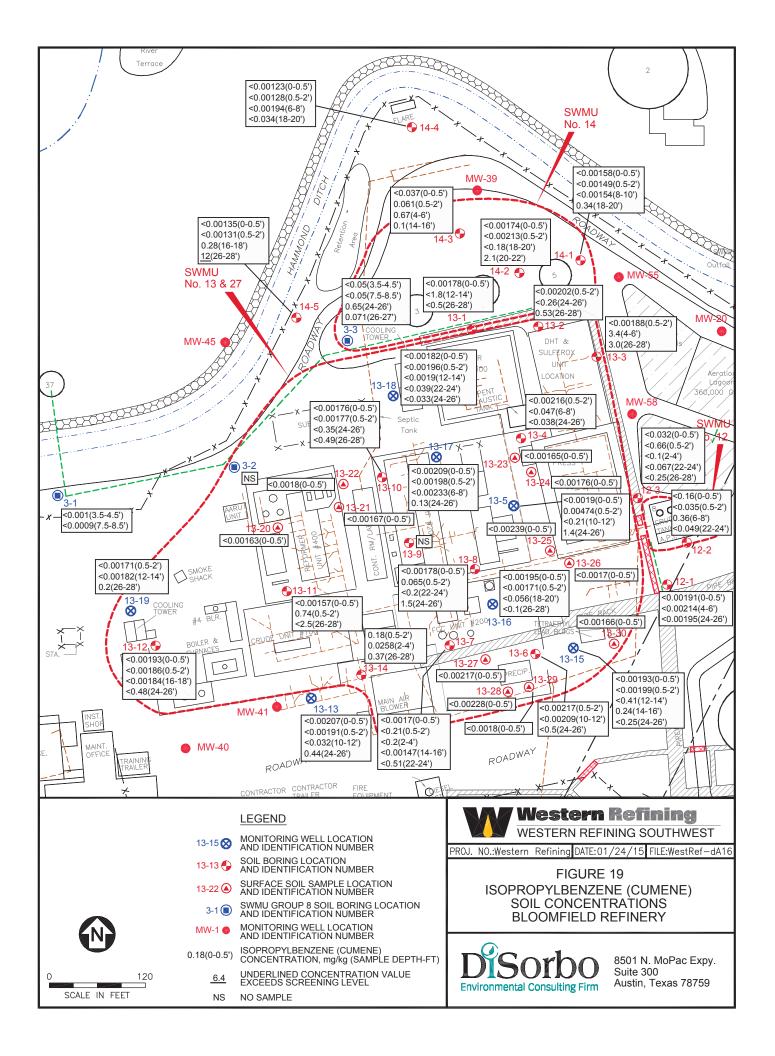


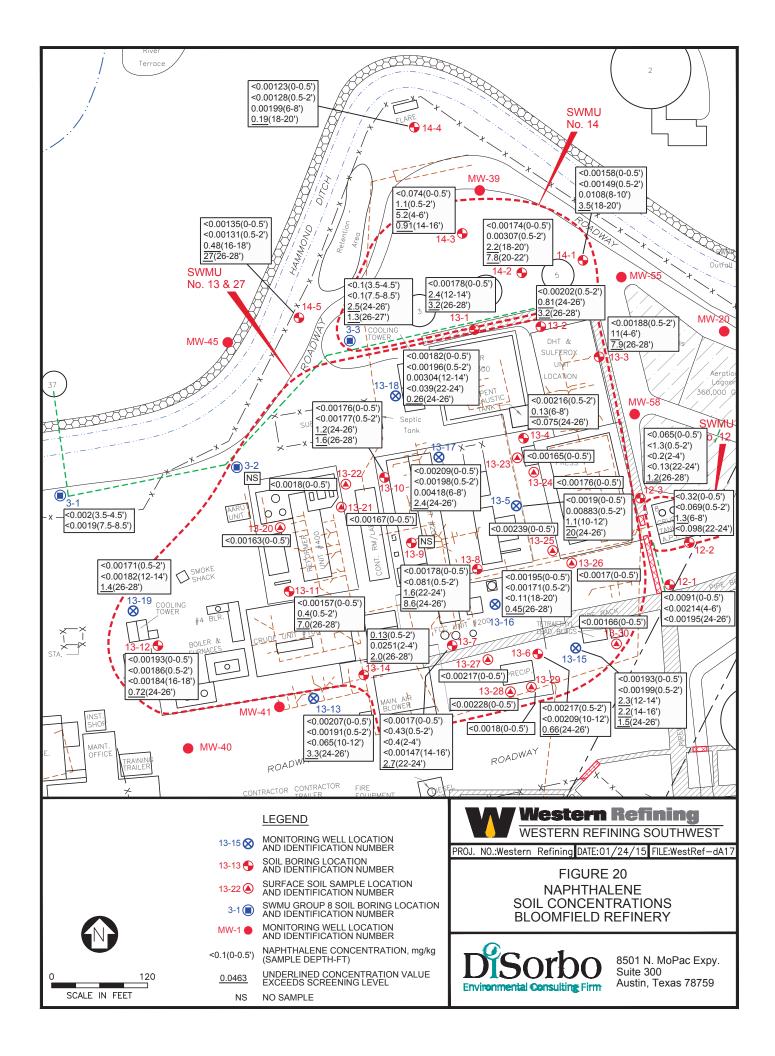


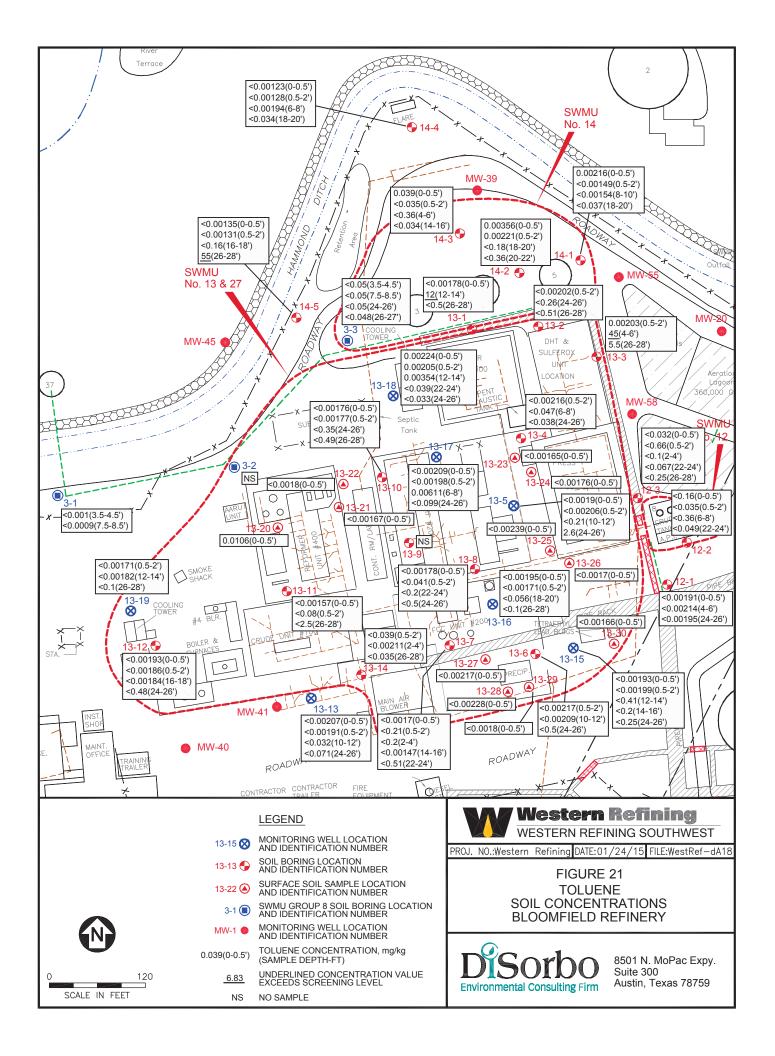


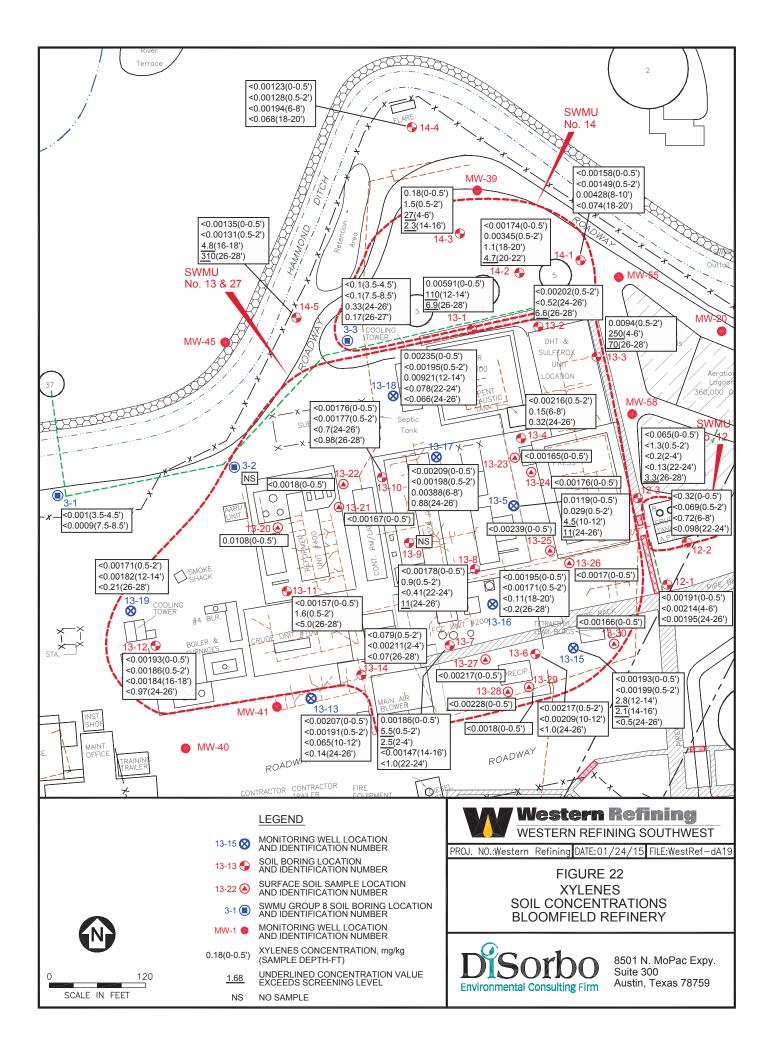


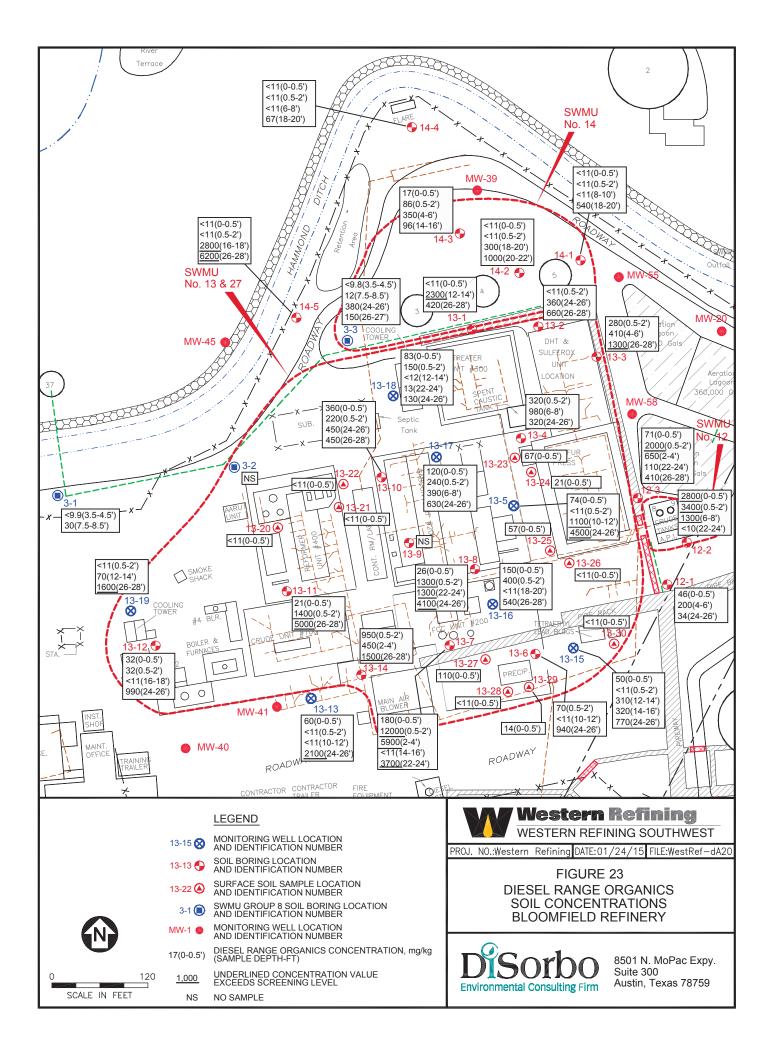


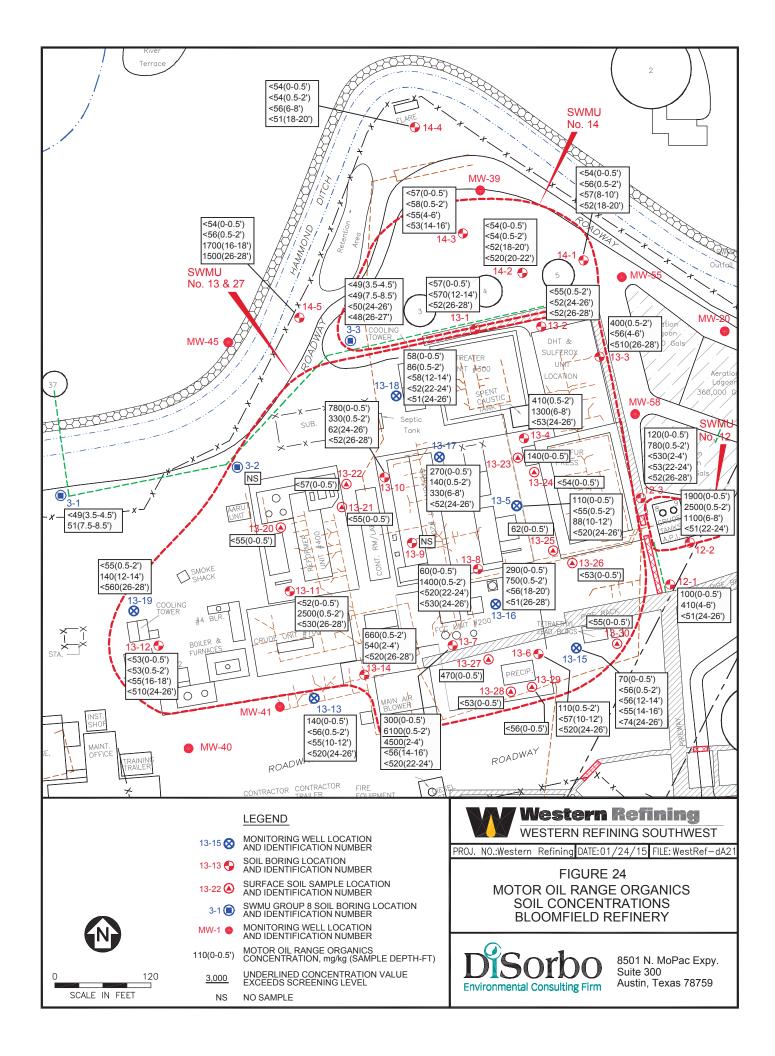


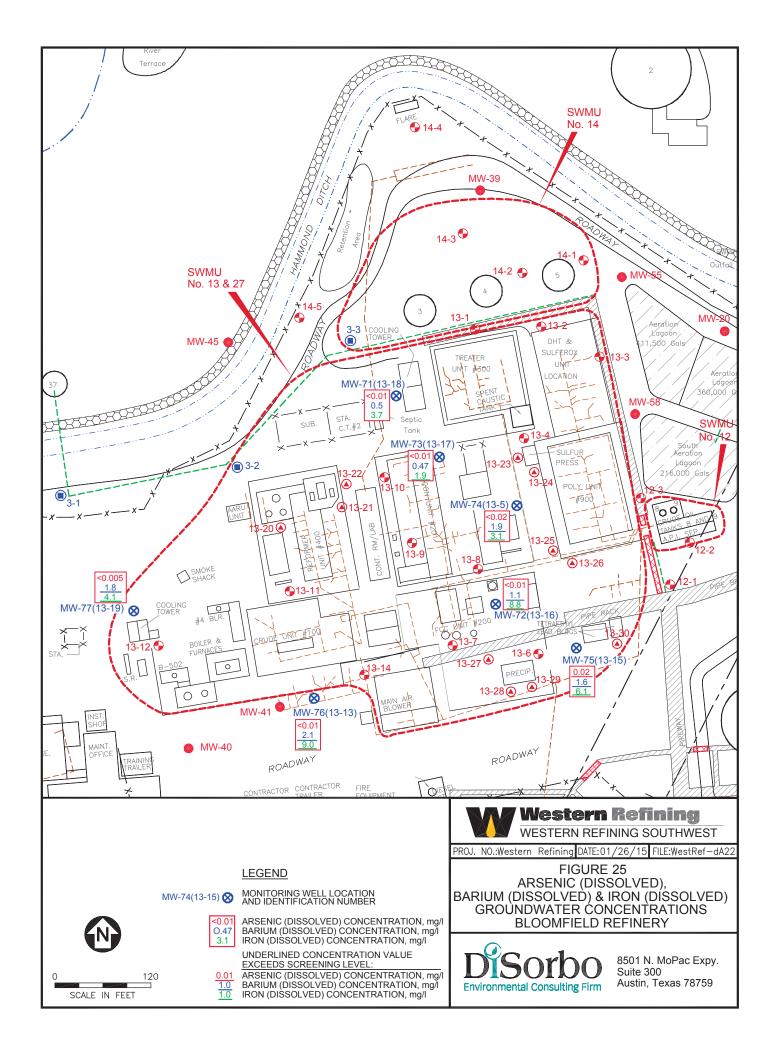


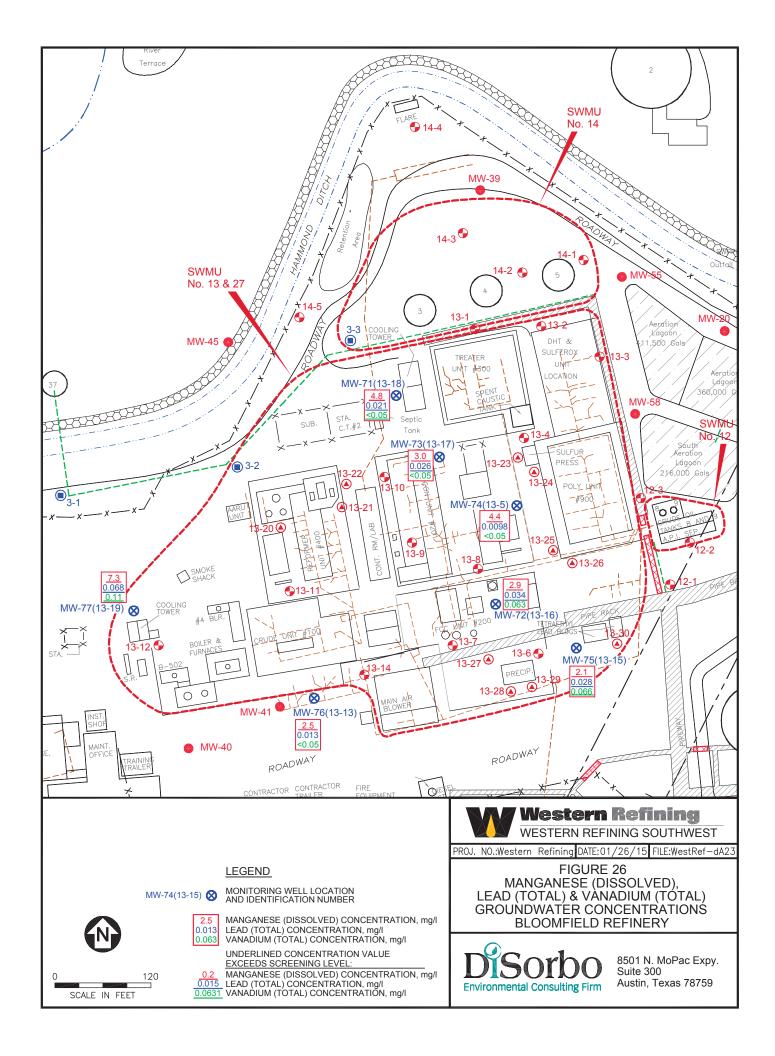


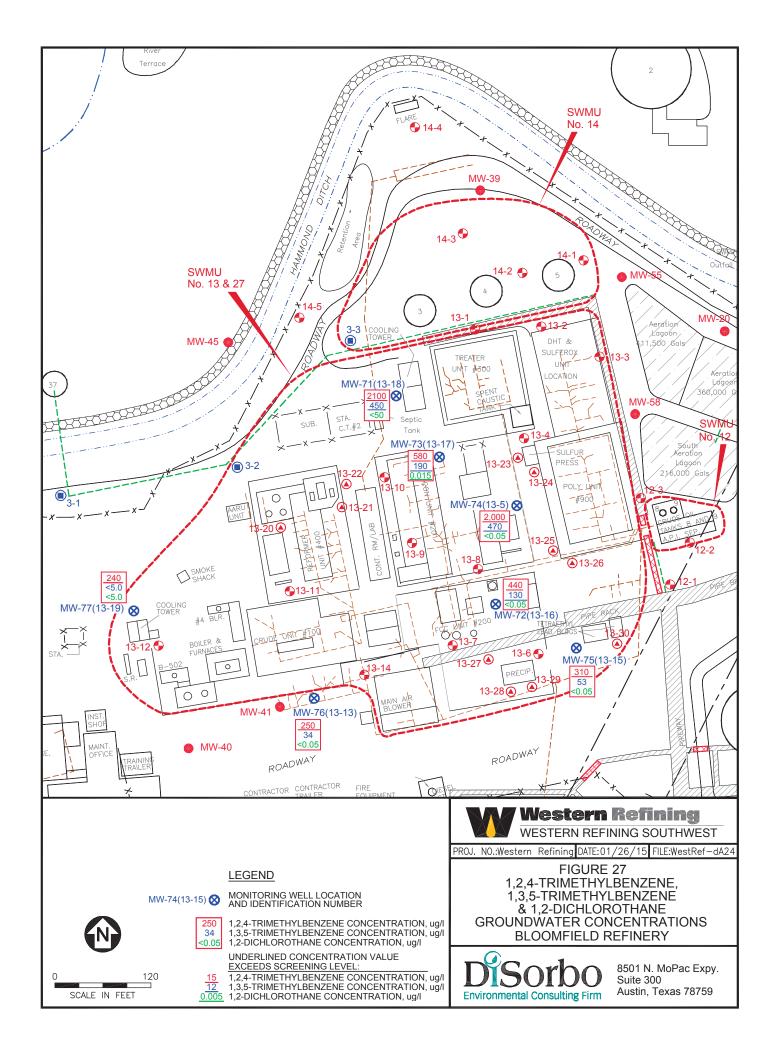


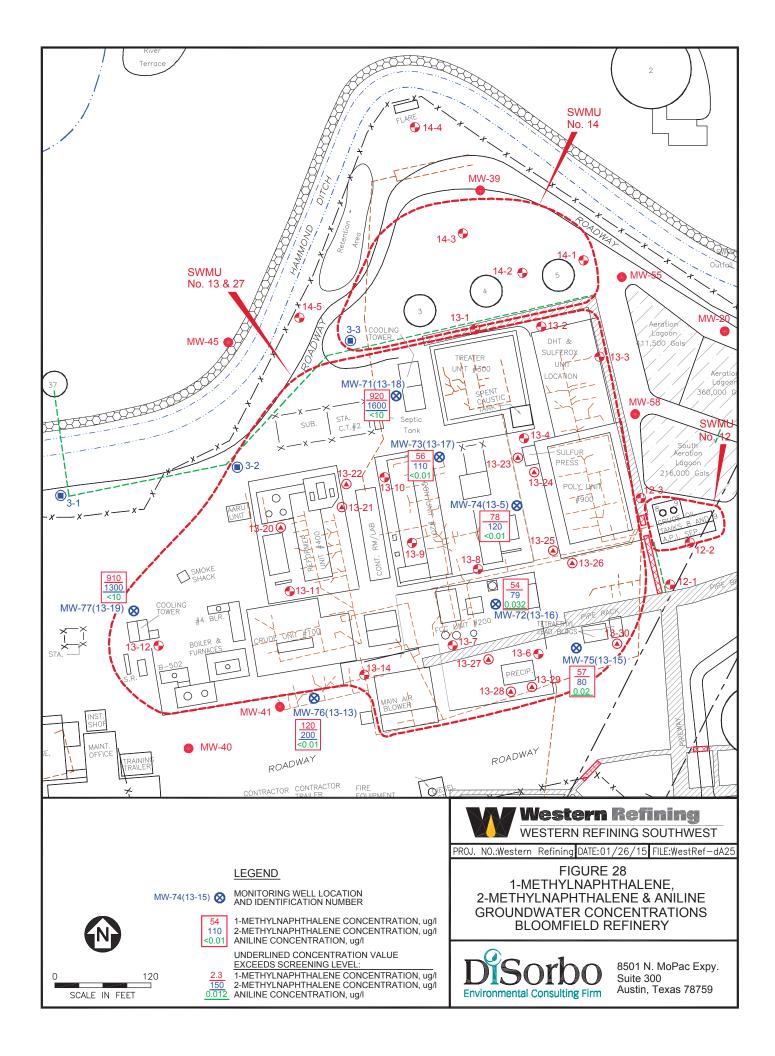


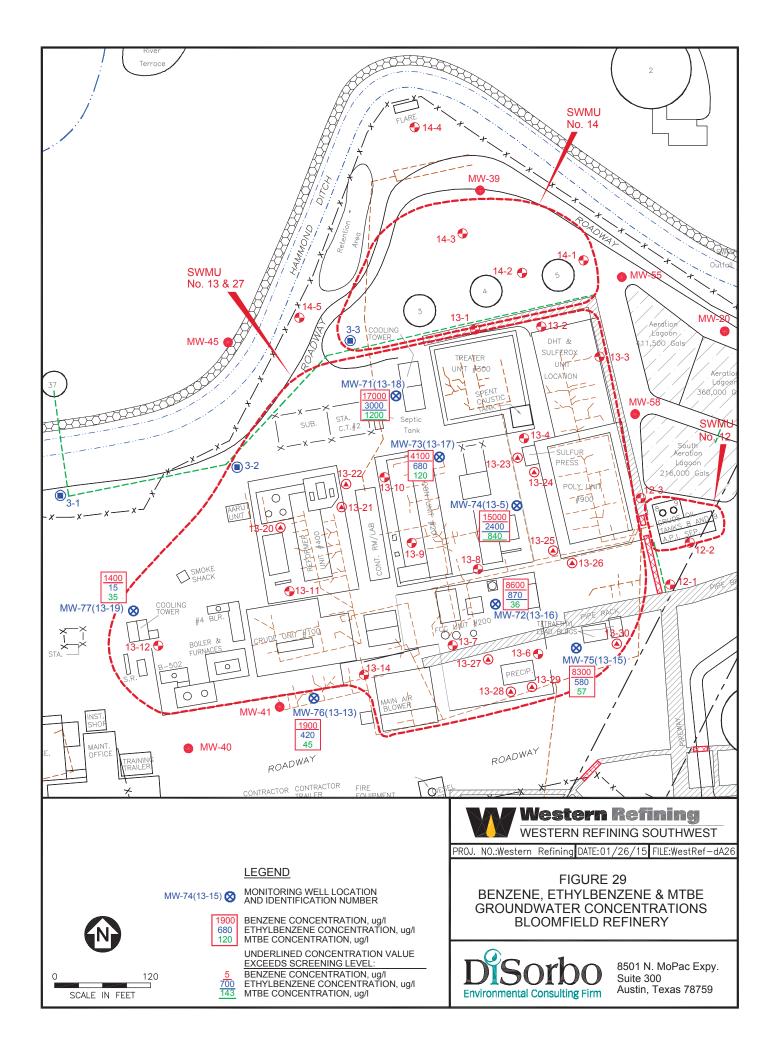


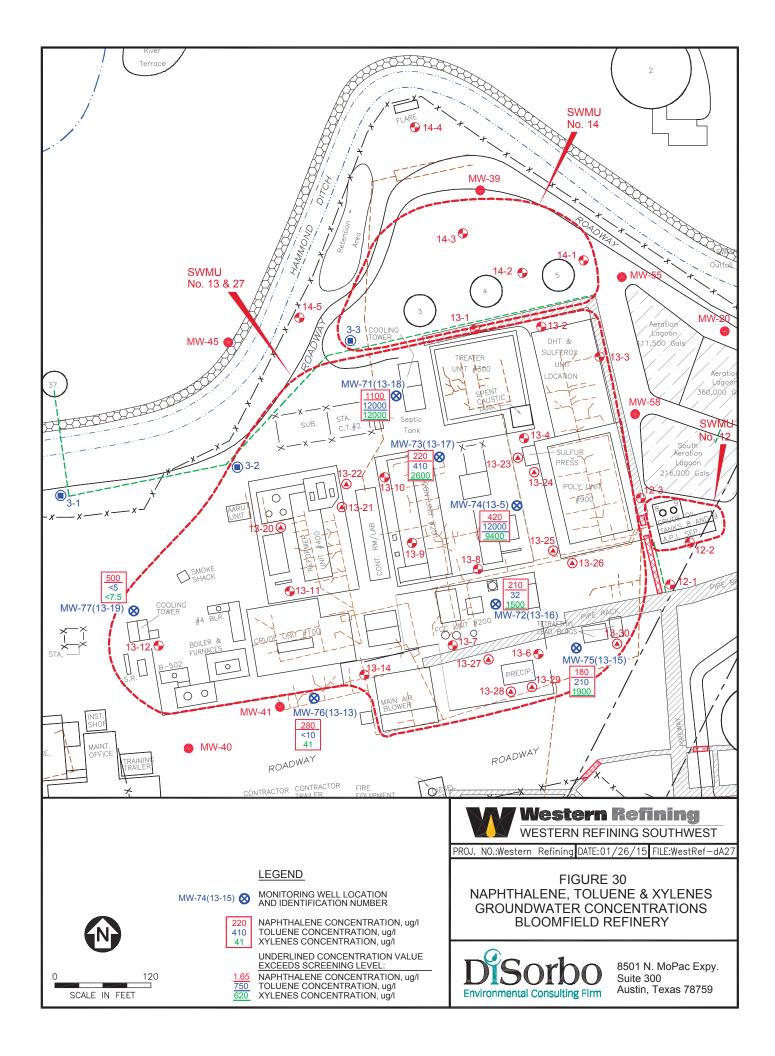


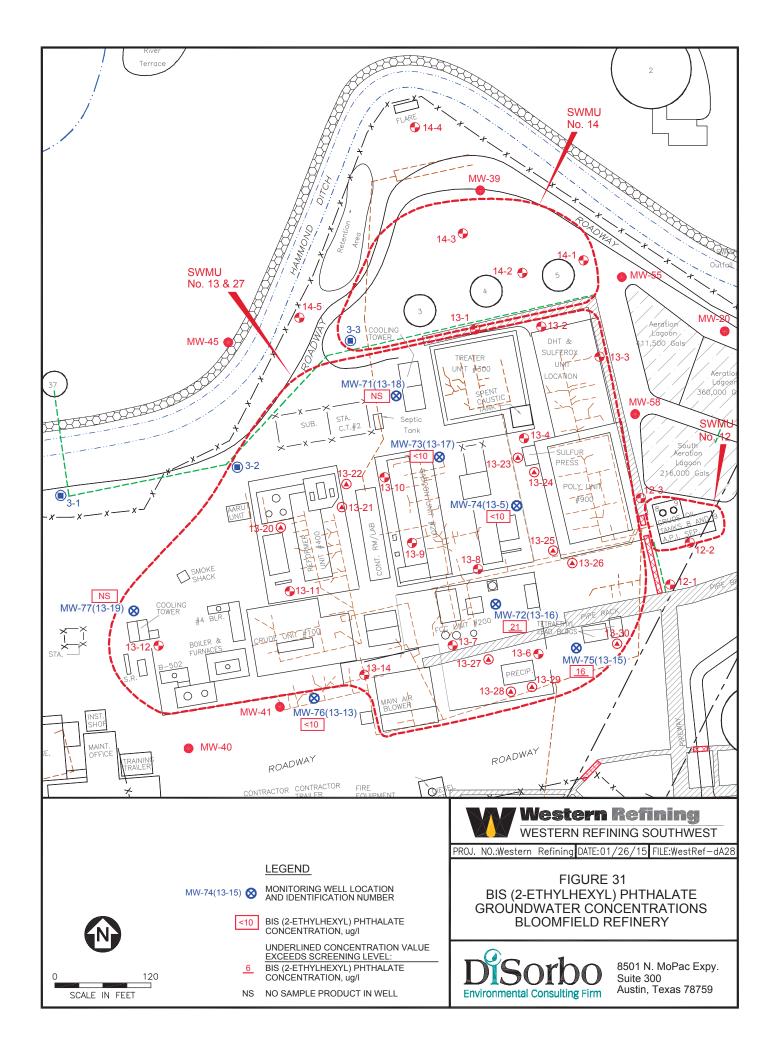


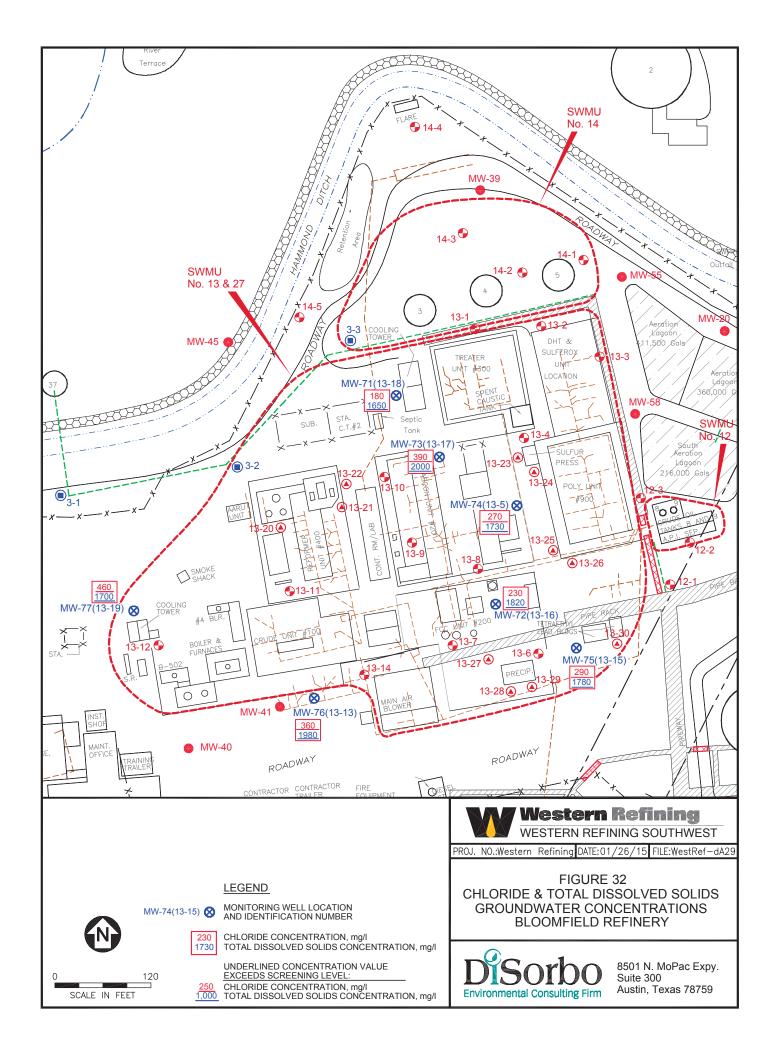












Appendix A
Photographs

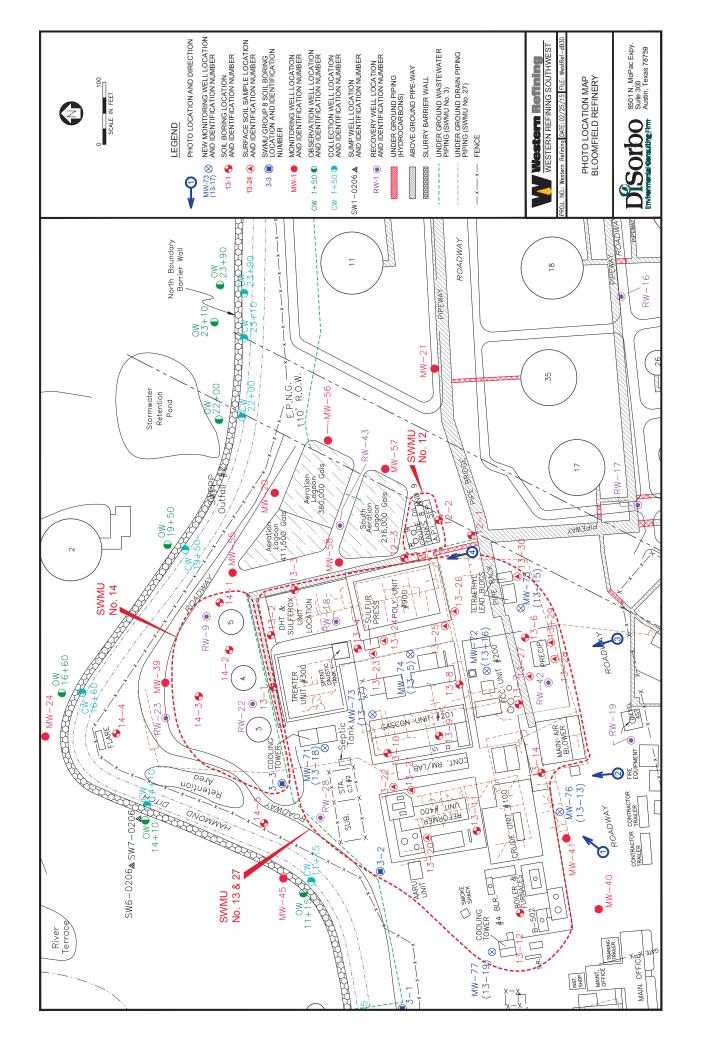




Photo 1 – SWMU 13 Looking northeast at former Crude Unit and Gas Con Unit.



Photo 2 - SWMU 13 Looking north-northeast across former location of Crude Unit.



Photo 3 - SWMU 13 Looking north across former location of Electrostatic Precipitator.



Photo 4 - Looking north along east edge of SWMU 13.

Appendix B Field Methods

Field Methods

Pursuant to Section IV of the Order, an investigation of soils and groundwater was conducted to determine and evaluate the presence, nature, extent, fate, and transport of contaminants. To accomplish this objective, soil samples were collected from borings at SWMUs No. 12, 13, 14, and 27, and groundwater samples were collected from within SWMUs No. 13 and 27. The field methods are described below and individual discussions are presented for the following activities:

- Drilling procedures;
- Soil screening;
- Decontamination procedures;
- Sample collection and handling procedures;
- Equipment calibration; and
- Management of investigation derived waste.

Drilling Procedures

The soil borings were completed using hollow-stem augers (HAS) and air rotary methods. A hand auger was used for shallow borings. Soil samples were collected continuously and logged by a qualified geologist in accordance with the Unified Soil Classification System (USCS) nomenclature. As shown on the boring logs, the data recorded included the lithologic interval, symbol, percent recovery, field screening results, and a sample description of the cuttings and core samples.

Soil Screening

Samples obtained from the borings were screened in the field on 2-foot intervals for evidence of contaminants. Field screening results were recorded on the soil boring logs. Field screening results were used to aid in the selection of soil samples for laboratory analysis. The primary screening methods include: (1) visual examination, (2) olfactory examination, and (3) headspace vapor screening for volatile organic compounds.

Visual screening included examining the soil samples for evidence of staining caused by petroleumrelated compounds or other substances that may have caused staining of soils such as elemental sulfur or cyanide compounds. Headspace vapor screening was conducted and involved placing a soil sample in a plastic sealable bag allowing space for ambient air. The bag was sealed, labeled and then shaken gently to expose the soil to the air trapped in the container. The sealed bag was