APPROVED
By Nelson Velez at 12:01 pm, Jan 14, 2022

Review of 2020 Annual Report: **Content satisfactory**

1. Continue as stated within the recommendations of the aforementioned report.

a. Collect confirmation soil samples from the Site at the locations presented on Figure 5 of the report
b. Create logs of all bore holes with standardized data collection information
c. Collect a minimum of 2 samples per boring and analyze for TPH and BTEX
d. Continue quarterly gauging of wells MW-2 through MW-7
Submit next annual report to OCD no later than March 31, 2022.

November 12, 2021

New Mexico Energy, Minerals and Natural Resources Department
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Subject: **2020 Annual Report**
Bloomfield Crude Station
Bloomfield, New Mexico
Western Refining Southwest, LLC
NMOCD Environmental Order: 3RP-258

Mr. Cory Smith

On behalf of Western Refining Southwest, LLC (Western), WSP USA Inc. (WSP), formerly LT Environmental, Inc. (LTE), has prepared this *2020 Annual Report* documenting the remediation of impacted soil and groundwater at the Bloomfield Crude Station (Site), located at 530 North 5th Street in Bloomfield, New Mexico (Figure 1). Based on Site conditions and guidance from the New Mexico Oil Conservation Division (NMOCD), Western performed quarterly groundwater monitoring in 2020. Specifically, groundwater monitoring wells MW-2 through MW-7 located at the Site were gauged for depth-to-groundwater elevations and to assess the presence of phase-separated hydrocarbons (PSH). Additionally, monitoring well MW-7 was sampled in February and March of 2020 for laboratory analysis. This report summarizes findings and recommendations for the Site moving forward.

SITE BACKGROUND

The Site is located in the northwest quarter of the northwest quarter of Section 22, Township 29 North, and Range 11 West in San Juan County, New Mexico, as depicted on Figure 1. The fenced and locked Site is in a mixed residential and industrial area within the limits of the City of Bloomfield, New Mexico. Water for potable use near the Site is supplied by the City of Bloomfield. According to the New Mexico Office of the State Engineer, the nearest downgradient water well is over 1,800 feet downgradient of the Site.

RELEASE BACKGROUND

The Site was originally leased for oil exploration and production on September 6, 1929. Since that time, the Site has been owned and leased by several companies who have operated various process units and tanks on or near the Site, including for refining operations. These companies include, but are not limited to, Aerex Refining, Plateau Refining, Shell Oil Company, El Paso Products, Malco, Clayton Investment of Thriftway Marketing, Giant Industries Arizona, Inc. (Giant), and the current owner, Western. In 1994, the Site operated as a crude oil storage facility under ownership of Giant. The Site contained several buildings and tanks, including one 55,000-barrel tank identified as Tank 967-D used to store crude oil (Figure 2). Tank 967-D was constructed in 1956 and used until 1991. In association with the removal of Tank 967-D, soil samples collected on March 15, 1994 indicated the presence of petroleum hydrocarbons in the soil at the Site.

A second release from Tank 967-D occurred on December 12, 1995 when the tank caught fire while it was being cleaned for decommissioning and removal. The fire resulted in a release of tank-bottom material and lead based paint chips from the outside of the tank. The tank-bottom material and paint chips stayed within a limited, contained area and the material and impacted soils were removed by vacuum truck and disposed offsite. This release did not contribute to soil and groundwater impacts resulting from the original release discovered in 1994 and did not require further remediation.

ADJACENT PROPERTIES

Parcel owners adjacent to the Site are shown on Figure 2. Western owns the former crude oil storage property located at 530 North 5th Street. The City of Farmington owns a small parcel immediately to the west of Western's property. The City of Farmington property contains an electrical substation, two active gas wells operated by Manana Gas, Inc. (Jan Redding #1 and Cook #1E), and two

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historical plugged and abandoned oil/gas exploration and production wells (Kittell #1 and Bishop #1). Both active wells operated by Manana Gas, Inc. were drilled in 1987. Lampliter Enterprises, LLC (Lampliter) owns the parcel immediately south of Western's and west of the City of Farmington's property that the Lampliter parcel also had two historical oil/gas exploration and production wells (Bishop #3 and Hare #1) located on the property.

It is important to note that the public records for the historical wells in the NMOCD database are sparse and no latitude or longitude coordinates are available. The Bishop #3 well was drilled in 1925 for oil production and plugged and abandoned in approximately 1953. In 1982, the cement plugs were reset in the abandoned well. The Hare #1 well was spudded in 1941 and completed in 1942. In approximately 1980, the well was plugged and abandoned. No additional records were available for the Bishop #1 or the Kittell #1 wells. In addition, the Aerex Refinery, which operated from approximately 1931 to possibly the early 1960's, was formerly located east of the Site, immediately across North 5th Street. This facility has since been demolished and the property remains vacant. Vacant land, residential apartments, and houses are located around the Site, as shown on Figure 2.

SITE INVESTIGATIONS AND REMEDIATION

Following the discovery of the release associated with Tank 967-D, several environmental investigations were conducted between 1994 and 2000. Several borings were advanced at the Site to delineate soil impacts at the Site. Soil borings indicated that elevated concentrations of TPH and BTEX were present in soils resulting from the release and appeared to have migrated vertically and into saturated soils. Wells MW-1 through MW-7 were also installed between 1994 and 2000 to assess the potential for groundwater impacts resulting from the tank release. BTEX concentrations exceeding New Mexico Water Quality Control Commission (NMWQCC) standards were detected in wells MW-2, MW-6, and MW-7, with PSH present in well MW-2 during sampling events conducted between 1995 and 2002.

To address impacted soil and groundwater, remediation activities consisted of excavation of impacted soil and the installation/ operation of bioventing and air sparging (AS) systems at the Site. These investigations and remediation activities have been summarized in a previous LTE report dated August 2014 and submitted to NMOCD. The initial remedial approach consisted of excavating petroleum impacted soil until groundwater was encountered at the Site. Excavation started on August 2, 2000 and removed 12,924 cubic yards of impacted soil to depths up to 18 feet below ground surface (bgs). The aerial extent of the excavation is shown on Figure 3. Soil samples were collected from the bottom and sidewalls of the excavation prior to backfilling, with sample locations shown on Figure 3. Excavation results were originally summarized in the *Report for Remediation Excavation Work Performed During August 2020 for the Bloomfield Crude Station*, prepared by Philip Services Corp. and dated October 2000. Soil analytical results from excavation samples are summarized in Table 1.

Following backfill of the excavation, a bioventing system, consisting of injection points (IP) and monitoring points (MP), was installed on October 4, 2002 (Figure 3). The *2003 Annual Report, Bloomfield Crude Station, Bloomfield, New Mexico* prepared by Lodestar Services, Incorporated (dated March 2004) summarizes the installation of the bioventing system. During installation of the system, soils were field screened for volatile organic compounds (VOCs) using a photoionization detector (PID). Field screening results from soil samples collected during installation of IP and MP locations are presented on Table 2 and on Figure 3. Based on the field screening results, eight locations (MP3, MP7, MP8, MP11, IP7, IP10, IP12, and IP16) with the apparent greatest petroleum hydrocarbon impacts were chosen to conduct ongoing soil performance sampling to assess the efficacy of the bioventing system over time. Soil borings were advanced near these IP/MP locations on a yearly basis between 2002 and 2012, with soil samples collected for analysis of total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds. Soil analytical results from these events are summarized in Table 3.

In October 2006, an air sparging well (SW-2) was installed adjacent to MW-2 to expedite remediation of elevated BTEX concentrations in groundwater in this area. The air sparging well operated until January 2007, at which time the BTEX concentrations in groundwater at well MW-2 had declined by 92 percent (%) during the four months of operation. By 2010, eight consecutive quarters of groundwater samples were below NMWQCC standards for BTEX in MW-2.

Annual groundwater monitoring was conducted during the operation of the AS system and continued until 2013. Annual groundwater sampling recommenced in 2017 in order to monitor residual impacts detected in well MW-7. Using data collected in 2017 and 2018, Western submitted a *Request for Closure* (August 10, 2018) report to the NMOCD. The report summarized the analytical data collected in 2017 and 2018 and presented the rationale for closure of the AS system and the Site with a request of No Further Action from NMOCD. NMOCD responded in a letter dated August 10, 2018 with a request for Western to continue monitoring groundwater elevations and the presence of PSH in wells MW-2 through MW-7.

2019 ANNUAL REPORT AND REQUEST FOR SYSTEM CLOSURE

Based on data collected in 2019, LTE prepared and submitted the *2019 Annual Report* (dated May 2020) to the NMOCD. In this report, LTE and Western requested that confirmation soil samples be collected from locations previously identified during the bioventing system installation and operation from 2002 to 2012. Soil samples would be used to assess current soil conditions, as soil samples had not been collected at the Site since 2012. If analytical results were below NMOCD Table 1 Closure Criteria (as presented in 19.15.29.12 of the New Mexico Administrative Code, or NMAC), LTE proposed to decommission the air sparging and bioventing systems, plug and abandon all injection and monitoring points, and plug and abandon monitoring wells MW-2, MW-3, and MW-4, which are located on Western's property. Western also proposed to continue quarterly gauging of wells MW-5, MW-6, and MW-7 (located on neighboring properties not owned by Western) while investigating other potential sources of contaminants detected in well MW-7.

The NMOCD accepted the *2019 Annual Report* on January 14, 2021 via email and stated the following conditions:

> "As per our discussion yesterday, OCD has accepted the Annual report for the data provided. However at this time has not made a decision on section 5 regarding deconstruction of the air sparge system and the collection of confirmation [soil] samples.
>
> OCD cannot make a determination on the proposed [soil] sampling due to limited information regarding the locations where Western intend to collect the samples. If possible, some historic soil sample results that may indicate high levels of impacts, and or bore logs, and a map showing those areas would be very helpful in helping the OCD determine if the proposed sample locations are protective of fresh water, human health and the environment."

Because of the delay in response, soil sampling and/or system decommissioning work was not performed in 2020.

CURRENT SITE CONDITIONS

The concentrations of petroleum hydrocarbons in soil and groundwater have been significantly reduced since remediation began at the Site. The following section summarizes Site conditions since remediation activities ceased in 2013.

SOIL CONDITIONS

As part of the bioventing plan, soil was monitored regularly to assess concentrations of BTEX and TPH. By comparing the initial TPH and BTEX concentrations obtained from soil samples collected during bioventing system installation to the most recent soil samples collected in April 2012, TPH concentrations in MP3, MP7, MP8, MP11, IP7, IP10, IP12, and IP16 decreased by 91% to 99% at the Site due to the bioventing activities. During the April 2012 sampling event, the TPH concentration at IP-12 was 139.2 mg/kg; no other sample results exceeded the NMOCD standard of 100 mg/kg TPH (Table 3). The initial sampling results indicated low concentrations of total BTEX in the soil, which subsequently declined as a direct result of the bioventing activities. No BTEX concentrations exceeded the laboratory method detection limit in any soil sample from April 2009 through April 2012 (Table 3).

GROUNDWATER CONDITIONS

Groundwater gauging and sampling has been conducted over the last 26 years. Depth-to-water and depth-to-phase separated hydrocarbons (PSH) measurements collected during these events are presented in Table 4. Groundwater flow direction is generally to the south/southwest. Interpreted potentiometric-surface maps for each quarter in 2020 are depicted on Figures 4A through 4D.

Laboratory analytical results from the 2012, 2013, 2017, and 2018 groundwater sampling events indicate BTEX concentrations in all monitoring wells have continually declined and have been below NMWQCC standards since 2011, with the exception of MW-7 (Table 5). Although declining, benzene and total xylenes remained in well MW-7 at concentrations greater than NMWQCC standards between 2001 and 2013. During the November 2017 sampling event, BTEX concentrations in all wells, including MW-7, were below NMWQCC standards. However, during the May 2018 sampling event, PSH was encountered in well MW-7 for the first time since sampling began at this well in 2001. Groundwater conditions in all other wells remained the same as previous sampling events with no presence of PSH and BTEX concentrations were below NMWQCC standards.

Between 1994 and 2013, anions/cations, metals, and groundwater quality parameters were analyzed during annual sampling events (Table 6). Historically, iron, manganese, sulfate, and total dissolved solids (TDS) have been above NMWQCC standards in a majority of the existing monitoring wells at the Site, including the upgradient monitoring well MW-3. Based on these data, it is likely that elevated concentrations of these constituents are naturally occurring in the shallow perched aquifer located below the Site. In addition,

the concentration of chloride in MW-5 exceeded the NMWQCC standards during most sampling events (2013) and there were several sampling events with barium concentrations exceeding the NMWQCC standard in well MW-6 and MW-7. Other analyzed constituents were either below NMWQCC standards or were not detected above laboratory-reporting limits.

In accordance with NMOCD's August 10, 2018 letter, LTE conducted gauging of depth-to-groundwater and the presence of PSH in 2019 and 2020. PSH was encountered in well MW-7 during the first three quarters of 2019. However, PSH was not present in well MW-7 between November 2019 and March 2020. PSH was again present in April, May, and July of 2020 during gauging events. PSH was not encountered during the September, October, November, or December 2020 gauging events. Furthermore, well MW-7 was sampled in February and March 2020 when PSH was not encountered in the well. Analytical results indicated that benzene and toluene concentrations were not detected above laboratory reporting limits during either sampling event. Ethylbenzene and xylenes were detected during both sampling events, but at concentrations well below the NMWQCC standards. Analytical results are summarized in Table 5, with laboratory reports included as Enclosure A.

CONCLUSIONS

Based on the data collected from the numerous investigations over the past 26 years, the remediation activities performed at the Site have successfully reduced contaminant concentrations in both soil and groundwater to below NMOCD and NMWQCC standards. Conclusions regarding soil and groundwater impacts at the Site are presented below.

SOIL

Excavation of 12,924 cubic yards of hydrocarbon-impacted soil from the Site effectively removed the primary source of contamination and a majority of the mass of petroleum hydrocarbons in subsurface soil at the Site. This is evidenced by the absence of free product in well MW-2 within 28 months of completion of the excavation activities. Bioventing was used to deliver oxygen to the subsurface and address residual hydrocarbon impacts to soil. The oxygen delivered by the remediation systems degraded petroleum hydrocarbons in two ways: the physical process of volatilization and the biological process of biodegradation. In general, the rate of biodegradation will exceed the rate of volatilization, especially for heavier hydrocarbon constituents, such as those found at the Site. Biodegradation and the subsequent mass removal of petroleum hydrocarbons from the subsurface will eventually exhibit asymptotic behavior; at which time further mass removal of petroleum hydrocarbons from the soil is minimal relative to the amount of oxygen input into the system. By 2013, the bioventing system and residual petroleum hydrocarbon concentrations in the soil exhibited asymptotic behavior and further oxygen injection into the subsurface was not likely to yield significant additional petroleum hydrocarbon mass reduction in the soil. The system was subsequently shut down in 2013.

Remediation progress was monitored by the routine collection of soil samples for analysis of TPH and BTEX. Based on the April 2012 soil-sample results, concentrations of benzene and total BTEX met the NMOCD Table 1 Closure Criteria (19.15.29 NMAC). Soil sampling in 2012 indicated TPH concentrations in soil at the Site also met the NMOCD Table 1 Closure Criteria, with the exception of one exceedance of the strictest standard (100 mg/kg) at a concentration of 139.2 mg/kg (sample collected from location IP12). Based on these results, the residual TPH concentrations were present at a depth above groundwater and at least 12 feet below ground surface. The remaining TPH is comprised of heavier range diesel-range organics (DRO) and motor oil-range organics (MRO) contaminants, which are unlikely to migrate to groundwater, as evidenced by historical groundwater analytical results indicating that no to very low BTEX concentrations are present in groundwater at the Site resulting from the Tank 967-D release.

Laboratory results indicated that the excavation, combined with bioventing, decreased the total mass of petroleum hydrocarbons in the soil at the Site by up to 99% in 2012. The source of petroleum hydrocarbons in the soil has been removed and will no longer impact groundwater, as observed by the absence of BTEX in groundwater in monitoring wells affected by former Tank 967-D. Potential receptors also are unlikely to be impacted due to the subsurface location of the residual impact (approximately 12 feet bgs) and a composition of heavier range DRO and MRO, which are unlikely to migrate to groundwater.

GROUNDWATER

Western has successfully remediated groundwater impacted by former Tank 967-D. Evaluation of total BTEX concentrations in groundwater with groundwater flow direction between 1994 and 2020 indicates the presence of a groundwater plume with two, separate source areas: Tank 967-D at the Site; and a separate source off-site to the west of the Site near MW-7. In August 2000, petroleum hydrocarbon impacted soil at the Site was excavated, thus removing the majority of the petroleum hydrocarbons in soil, which were acting as a source of hydrocarbon impacts to groundwater at the Site. PSH was manually bailed from well MW-2 between 1995 and 2002, at which time PSH ceased to collect within the well. To further reduce elevated BTEX concentrations in this area, , air

sparging activities were conducted adjacent to MW-2 between October 2006 and January 2007, which resulted in in the decrease of benzene and total xylenes concentrations in MW-2 to less than 10 µg/L during all subsequent sampling events. Remediation of the petroleum hydrocarbon groundwater plume beneath the Site has decreased benzene and total xylene concentrations in groundwater at the Site by approximately 99%.

Elevated concentrations of chloride in MW-5 is likely attributed to dissolution of naturally occurring chloride found in the 11-foot thick clay layer that is intercepted by the 15-foot screened interval. Elevated barium concentrations in MW-7 located off-site is most likely attributable to historical drilling operations unrelated to crude oil storage at the Site.

Additionally, PSH was present in the off-site well MW-7 during three quarters of 2018, three quarters of 2019, and two quarter of 2020. PSH was not present in off-site well MW-7 for 16 years between 2001 and the end of 2017 and the source is unknown at this time. Based on the groundwater analytical results, the fact that well MW-7 is cross gradient of the Site, and several current and former oil and gas production wells surround this well, the PSH occasionally encountered in well MW-7 are likely not sourced from the release of petroleum hydrocarbons from Tank 967-D, but related to a separate source of petroleum hydrocarbons located north/west of the Site from operations by others.

RECOMMENDATIONS

Recommendations for the Site activities are discussed below.

PROPOSED SOIL CONFIRMATION SAMPLING

Based on the data collected in 2012, the bioventing and air sparging systems have successfully reduced BTEX and TPH concentrations in soil and groundwater at the Site. Further oxygen injection into the subsurface is not likely to yield significant additional petroleum hydrocarbon mass reduction. However, soil samples have not been collected since the bioventing system ceased operations. To confirm the successful remediation of soil contaminants and assess the potential for contaminant rebound, Western proposes to collect confirmation soil samples from the Site at the locations presented on Figure 5. The proposed borings are located in areas with the greatest historical soil impacts based on the soil samples collected during the 2000 remedial excavation and the installation of the injection and monitoring points for the bioventing system.

Western will utilize a track-mounted direct-push probe rig and/or hand auger to advance borings at the Site. These drilling methods can both obtain continuous soil samples from the subsurface. Soil lithology will be logged by an WSP geologist and described based on the Unified Soil Classification System (USCS) as specified in American Society for Testing and Materials (ASTM) D2488. Soil also will be inspected for visual staining and the presence or absence of odors. The soil will be characterized by visually inspecting the soil samples and field screening the soil headspace using a PID to monitor for the presence of organic vapors. Drilling and sampling equipment will be decontaminated prior to each use. Completed borings will be backfilled with hydrated bentonite from the total depth to ground surface.

Borings will be terminated at the depth of groundwater, as encountered during drilling by the presence of saturated soils. Field screening will be performed every 2 to 3 feet, where possible. At least two samples will be collected from each boring: one at the depth interval displaying the highest PID readings; and one sample at the terminus of each boring. If PID readings do not indicate elevated organic vapors, a soil sample will be collected from the depth interval most likely to be impacted based on visual/olfactory observations and/or a change in lithology (i.e., sand to silt or clay soil characteristics). Samples will be collected and placed directly into pre-cleaned jars and labeled with location, date, time, sampler, and method of analysis and immediately placed on ice. Strict chain-of-custody procedures will be followed during transport of the samples to Hall Environmental Analysis Laboratory, Inc. (Hall) in Albuquerque, New Mexico. Soil samples will be analyzed for TPH, gasoline range hydrocarbons (GRO), diesel range hydrocarbons (DRO), motor oil range hydrocarbons (MRO), chloride, and BTEX compounds.

If contaminant concentrations in soil are below NMOCD Table 1 Closure Criteria (19.15.29.12 NMAC), Western proposes to decommission the air sparging and bioventing systems, plug and abandon all injection and monitoring points, and plug and abandon monitoring wells MW-2, MW-3, and MW-4 (located on Western's property). Assuming favorable results, Western also plans to request a property-specific no further action determination from the NMOCD for the 530 North 5th Street property. After decommissioning the remediation system and wells MW-2, MW-3, and MW-4.

ONGOING GROUNDWATER MONITORING

Although Western considers the source of impacts to groundwater at MW-7 to be unrelated to their operations, Western will continue quarterly gauging of wells MW-2 through MW-7.

WSP appreciates the opportunity to provide this report to you. If you have any questions or comments regarding this report, do not hesitate to contact Stuart Hyde at (970) 385-1096 or at stuart.hyde@wsp.com, or Kateri Luka or at kaluka@marathonpetroleum.com.

Kind regards,

Stuart Hyde, L.G.
Senior Geologist

Ashley Ager, M.S., P.G.
Managing Director, Geologist

Enclosed:

Figure 1: Site Location Map
Figure 2: Site Map
Figure 3: Biovent System Layout and Monitoring Points
Figure 4A: Groundwater Elevation Map – March 2020
Figure 4B: Groundwater Elevation Map – May 2020
Figure 4C: Groundwater Elevation Map – July 2020
Figure 4D: Groundwater Elevation Map – November 2020
Figure 5: Proposed Boring Locations

Table 1: Excavation Soil Sample Results
Table 2: Bioventing System Installation PID Results
Table 3: Bioventing Performance Soil Sample Analytical Results
Table 4: Groundwater Elevation Data
Table 5: Groundwater Analytical Results
Table 6: Groundwater Chemistry Analytical Results

Enclosure A: Analytical Laboratory Reports

FIGURES

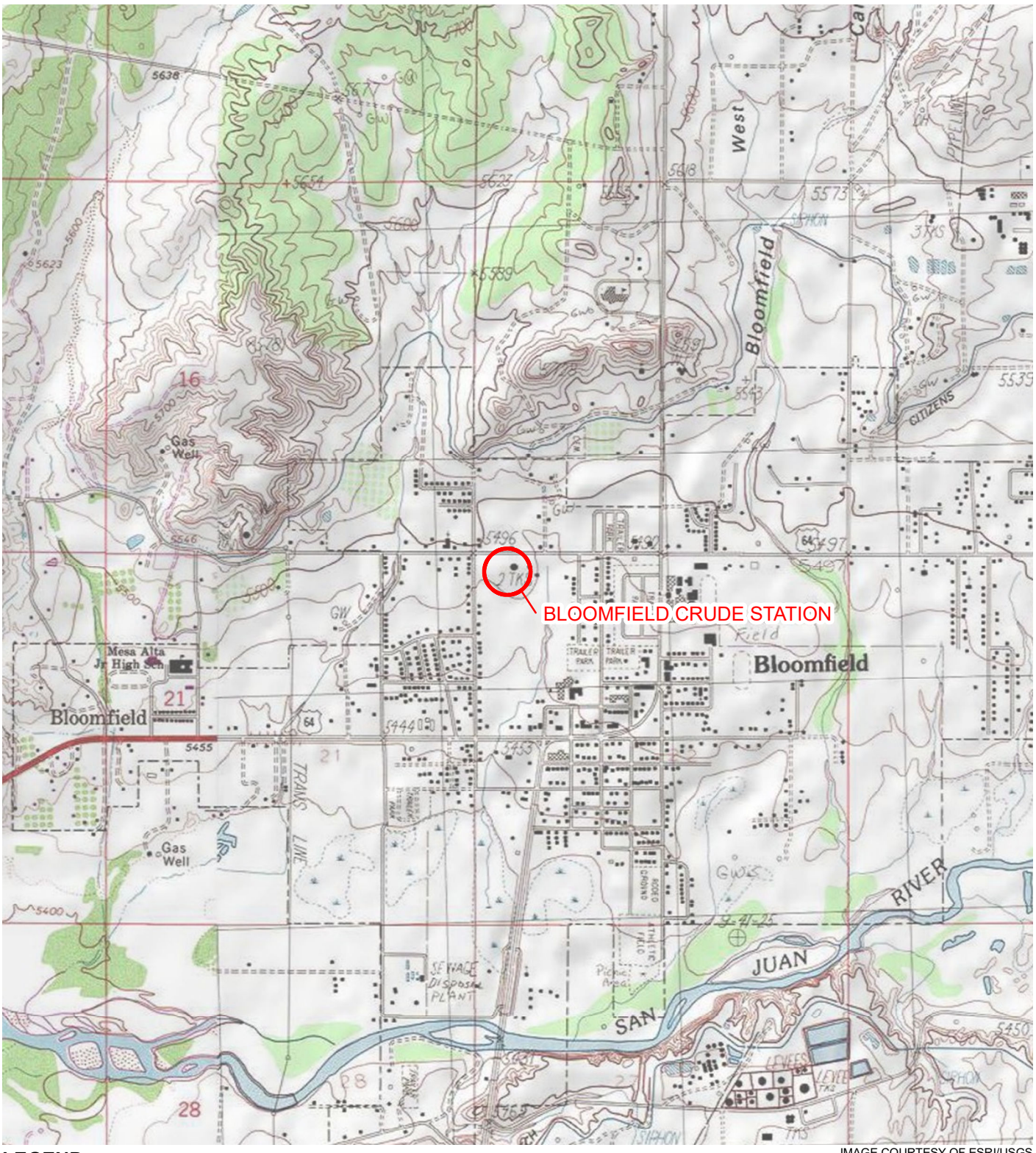

IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
BLOOMFIELD CRUDE STATION
NWNW SEC 22 T29N R11W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

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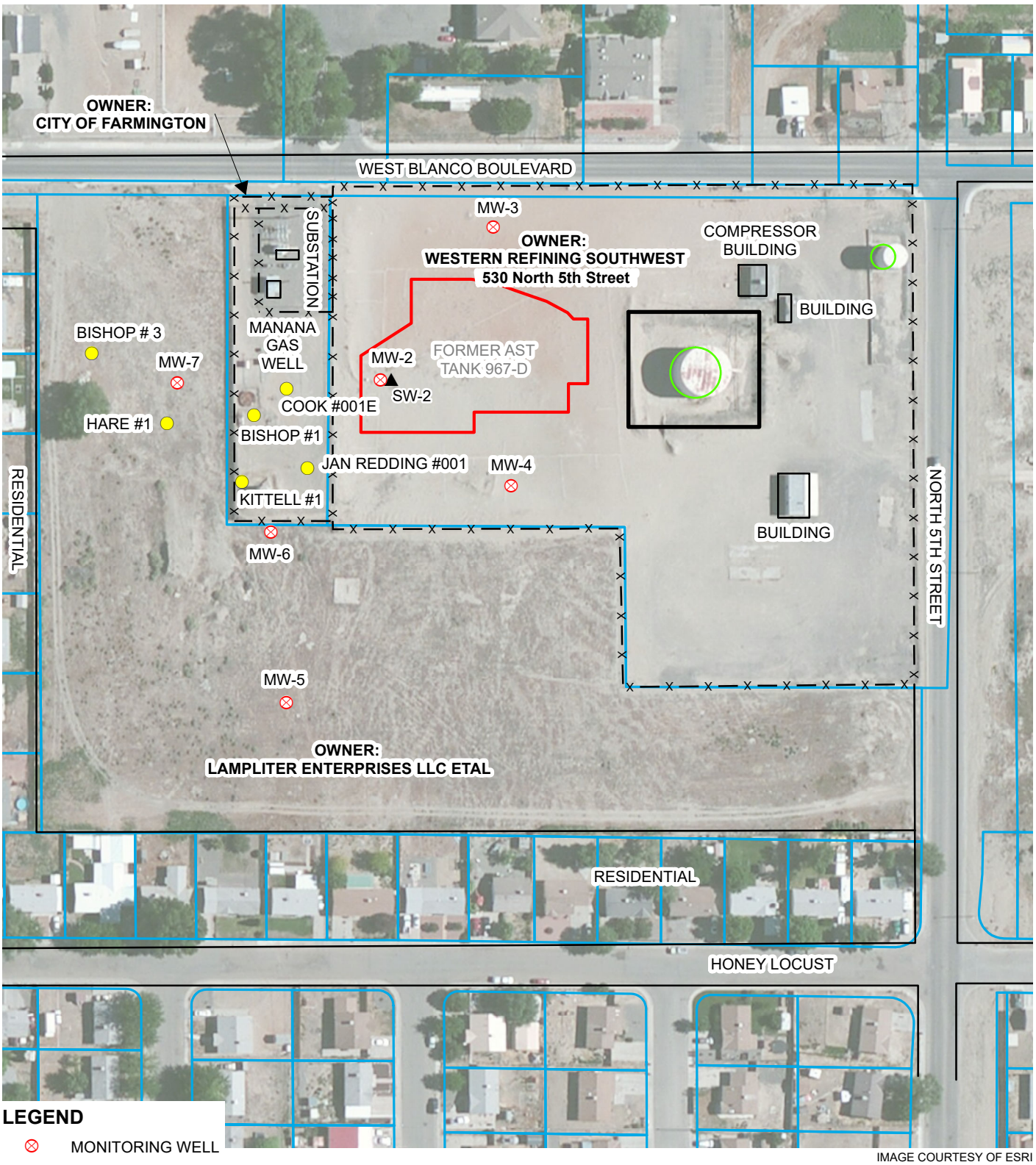

LEGEND

- MONITORING WELL
- HISTORIC OIL AND GAS WELL (APPROXIMATE)
- SPARGE WELL
- FENCE
- BERM
- FORMER EXCAVATION PERIMETER
- ABOVEGROUND STORAGE TANK (AST)
- PARCEL BOUNDARY

IMAGE COURTESY OF ESRI

0 140 280
Feet

N

FIGURE 2
SITE MAP
BLOOMFIELD CRUDE STATION
NWNW SEC 22 T29N R11W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

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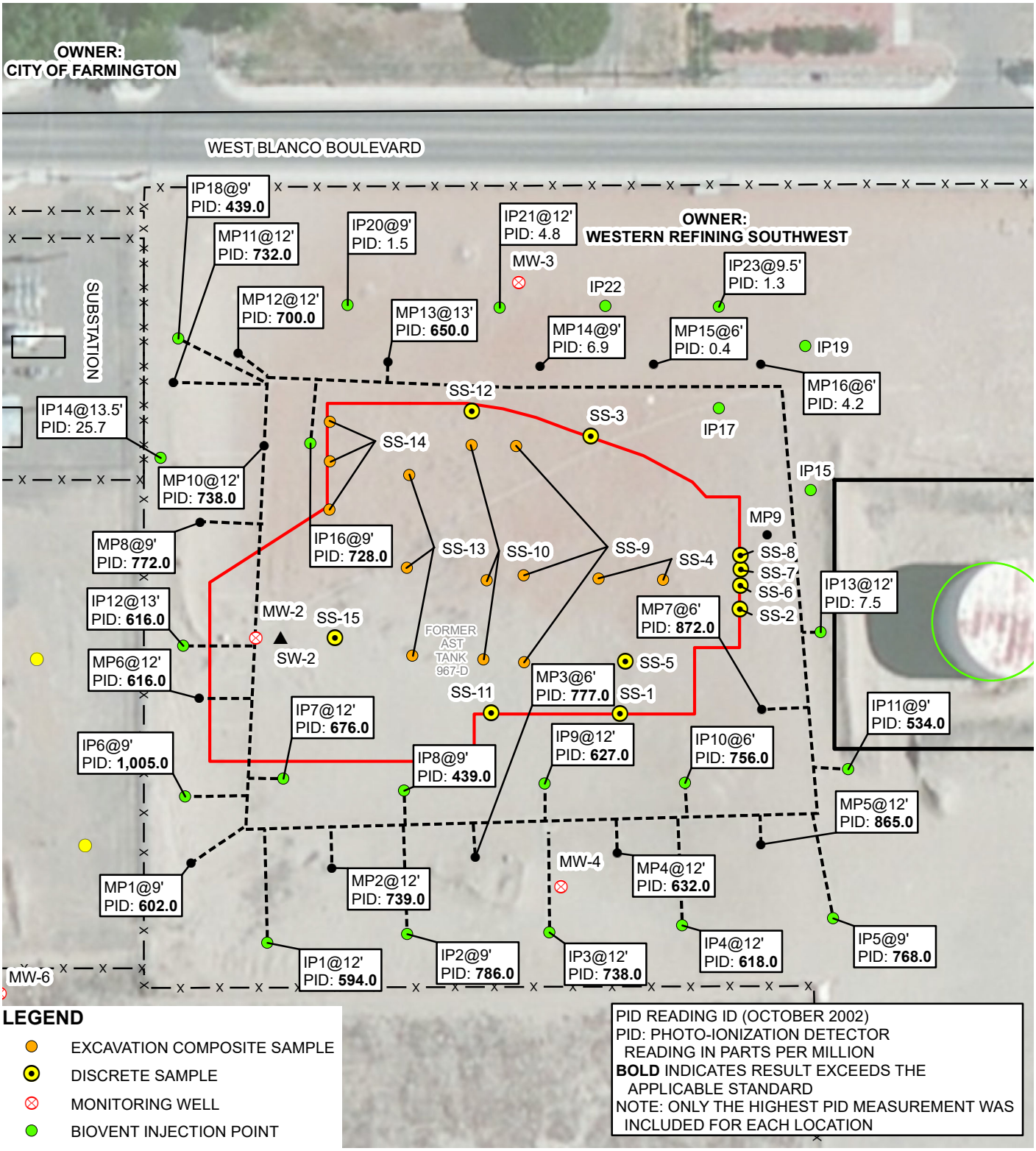

FIGURE 3
BIOVENT SYSTEM LAYOUT AND MONITORING POINTS
BLOOMFIELD CRUDE STATION
NWNW SEC 22 T29N R11W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

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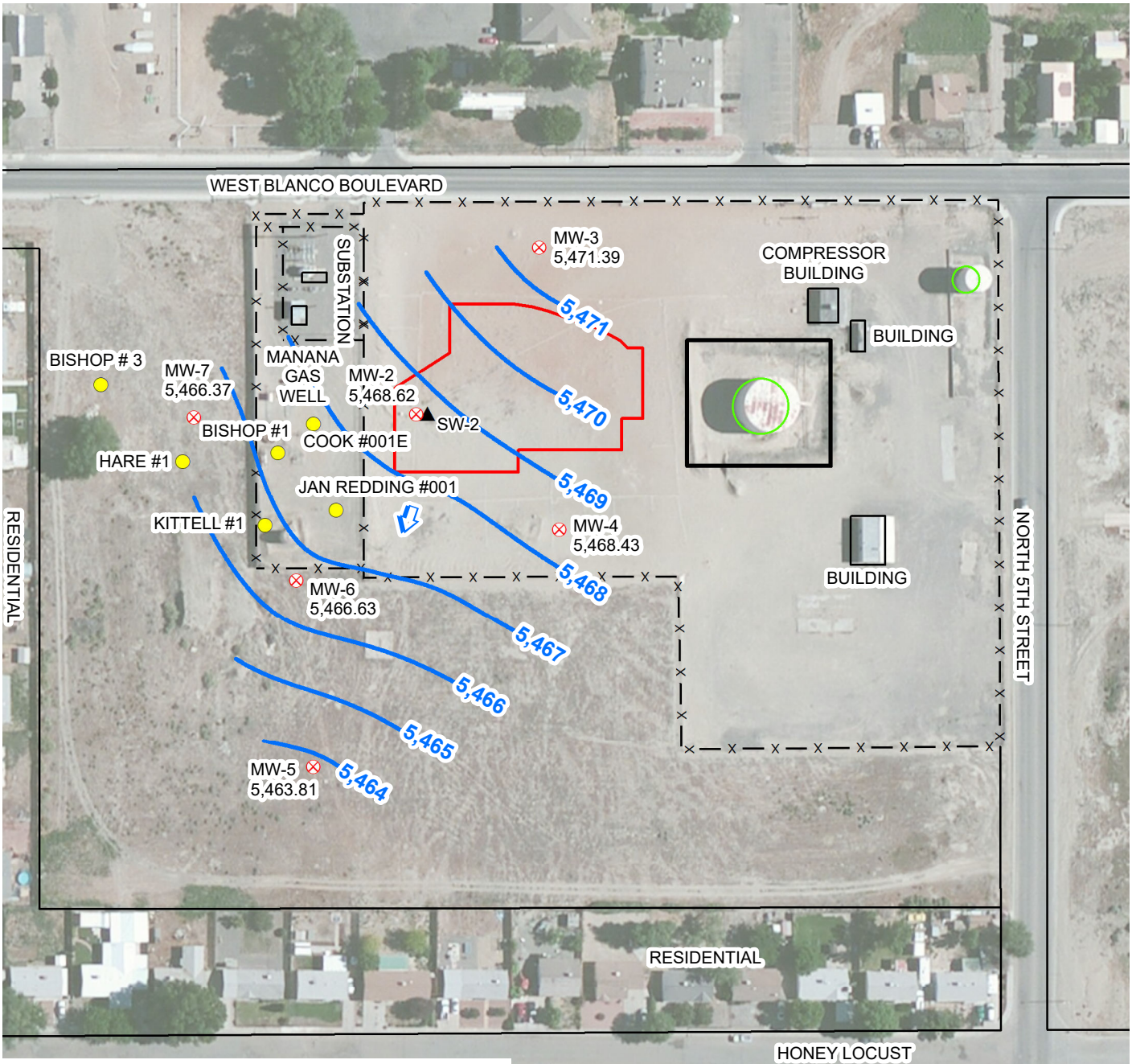

LEGEND

- MONITORING WELL GROUNDWATER ELEVATIONS MEASURED IN FEET ABOVE MEAN SEA LEVEL ON MARCH 19, 2020
- HISTORIC OIL AND GAS WELL (APPROXIMATE)
- SPARGE WELL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- x — x FENCE
- RELATIVE GROUNDWATER ELEVATION CONTOUR
- CONTOUR INTERVAL = 1.00 FOOT
- BERM
- FORMER EXCAVATION PERIMETER
- ABOVEGROUND STORAGE TANK (AST)

IMAGE COURTESY OF ESRI

0 140 280
Feet

N

FIGURE 4A
GROUNDWATER ELEVATION MAP - MARCH 2020
BLOOMFIELD CRUDE STATION
NWNW SEC 22 T29N R11W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

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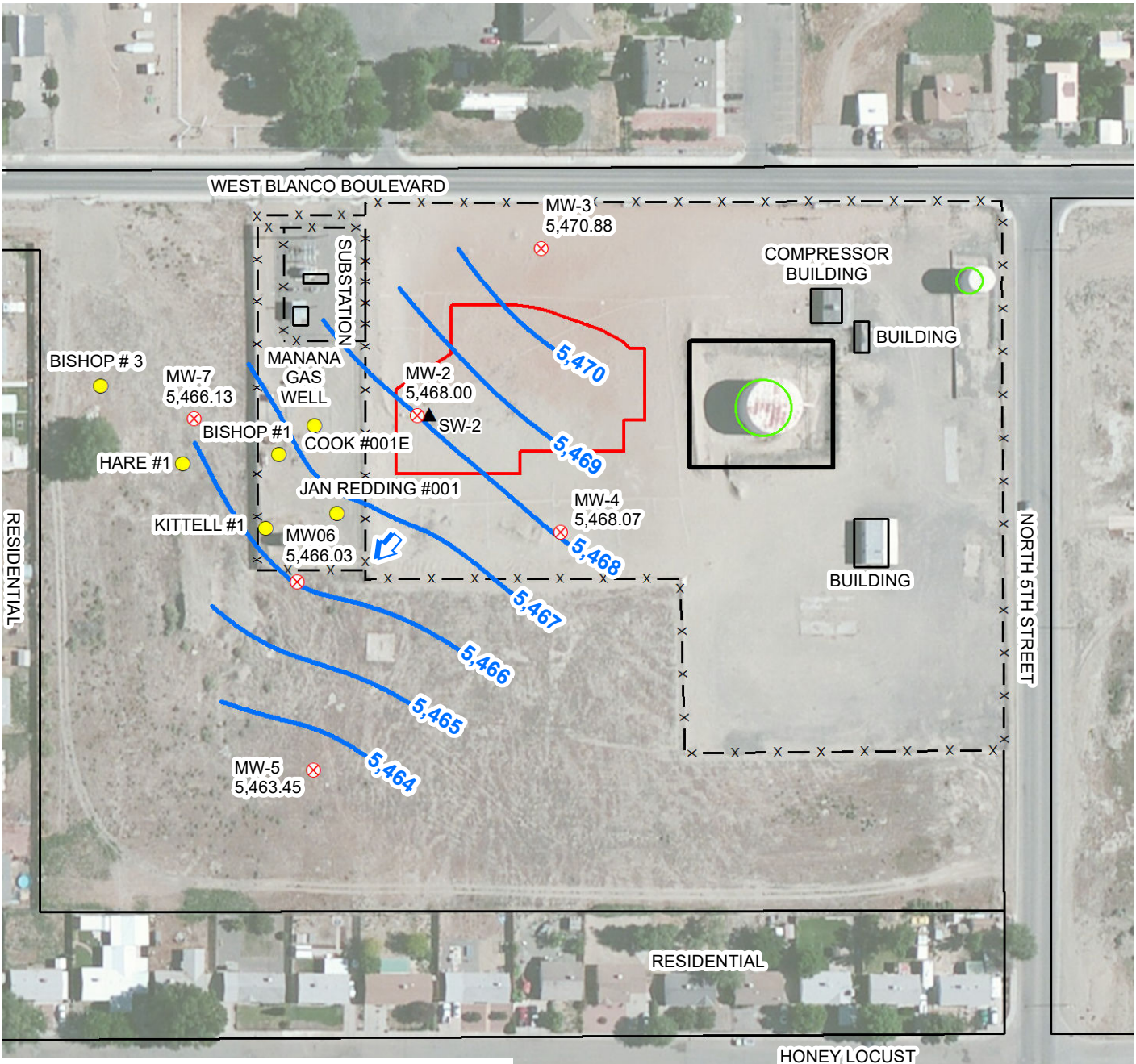

IMAGE COURTESY OF ESRI

LEGEND

- MONITORING WELL
  GROUNDWATER ELEVATIONS MEASURED IN FEET
  ABOVE MEAN SEA LEVEL ON MAY 20, 2020
- HISTORIC OIL AND GAS WELL (APPROXIMATE)
- SPARGE WELL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- FENCE
- RELATIVE GROUNDWATER ELEVATION CONTOUR
  CONTOUR INTERVAL = 1.00 FOOT
- BERM
- FORMER EXCAVATION PERIMETER
- ABOVEGROUND STORAGE TANK (AST)

0 140 280
Feet

N

FIGURE 4B
GROUNDWATER ELEVATION MAP - MAY 2020
BLOOMFIELD CRUDE STATION
NWNW SEC 22 T29N R11W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

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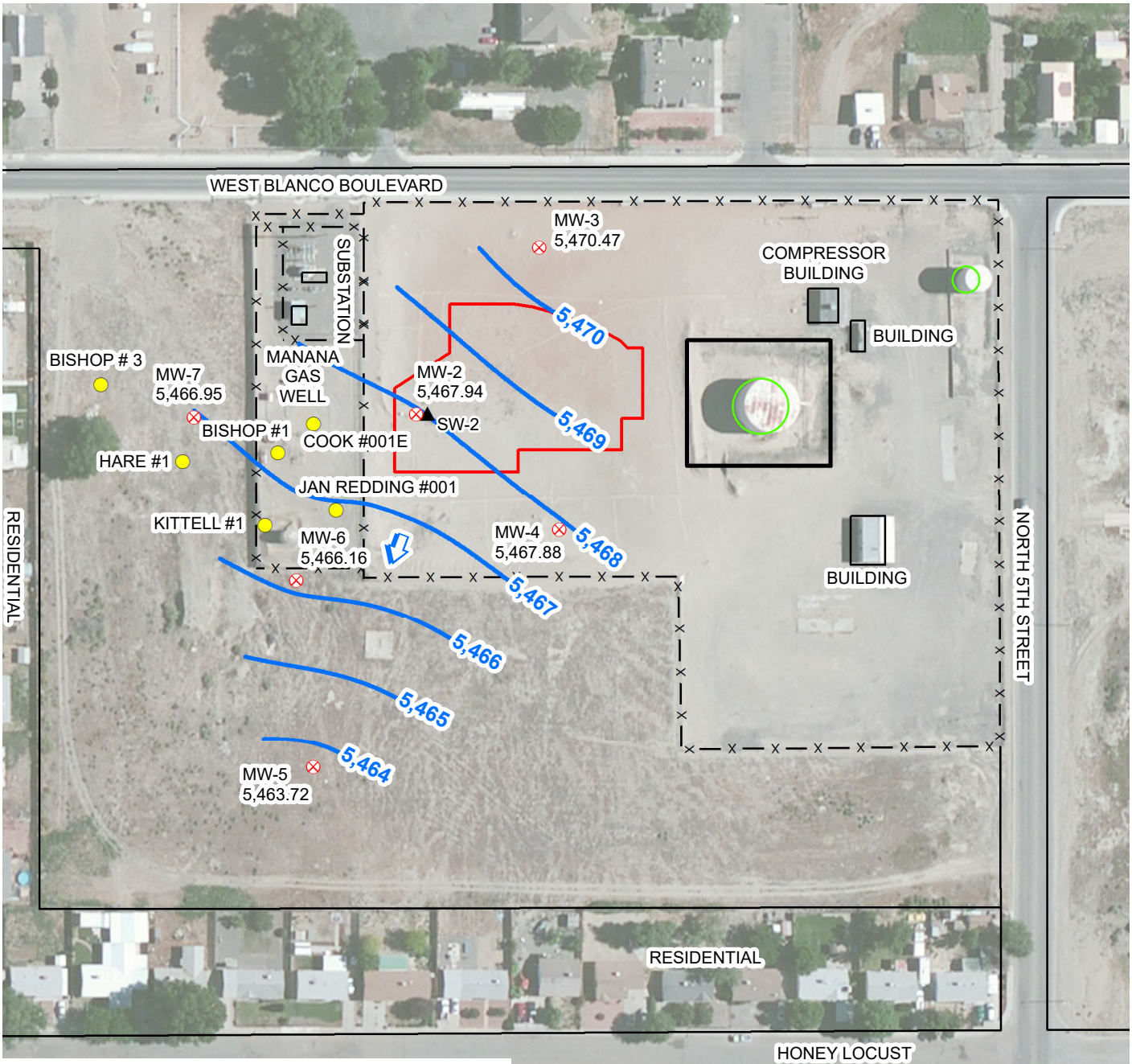

LEGEND

- MONITORING WELL
  GROUNDWATER ELEVATIONS MEASURED IN FEET
  ABOVE MEAN SEA LEVEL ON JULY 14, 2020
- HISTORIC OIL AND GAS WELL (APPROXIMATE)
- SPARGE WELL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- x — x FENCE
- RELATIVE GROUNDWATER ELEVATION CONTOUR
  CONTOUR INTERVAL = 1.00 FOOT
- BERM
- FORMER EXCAVATION PERIMETER
- ABOVEGROUND STORAGE TANK (AST)

IMAGE COURTESY OF ESRI

0 140 280
Feet

N

FIGURE 4C
GROUNDWATER ELEVATION MAP - JULY 2020
BLOOMFIELD CRUDE STATION
NWNW SEC 22 T29N R11W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

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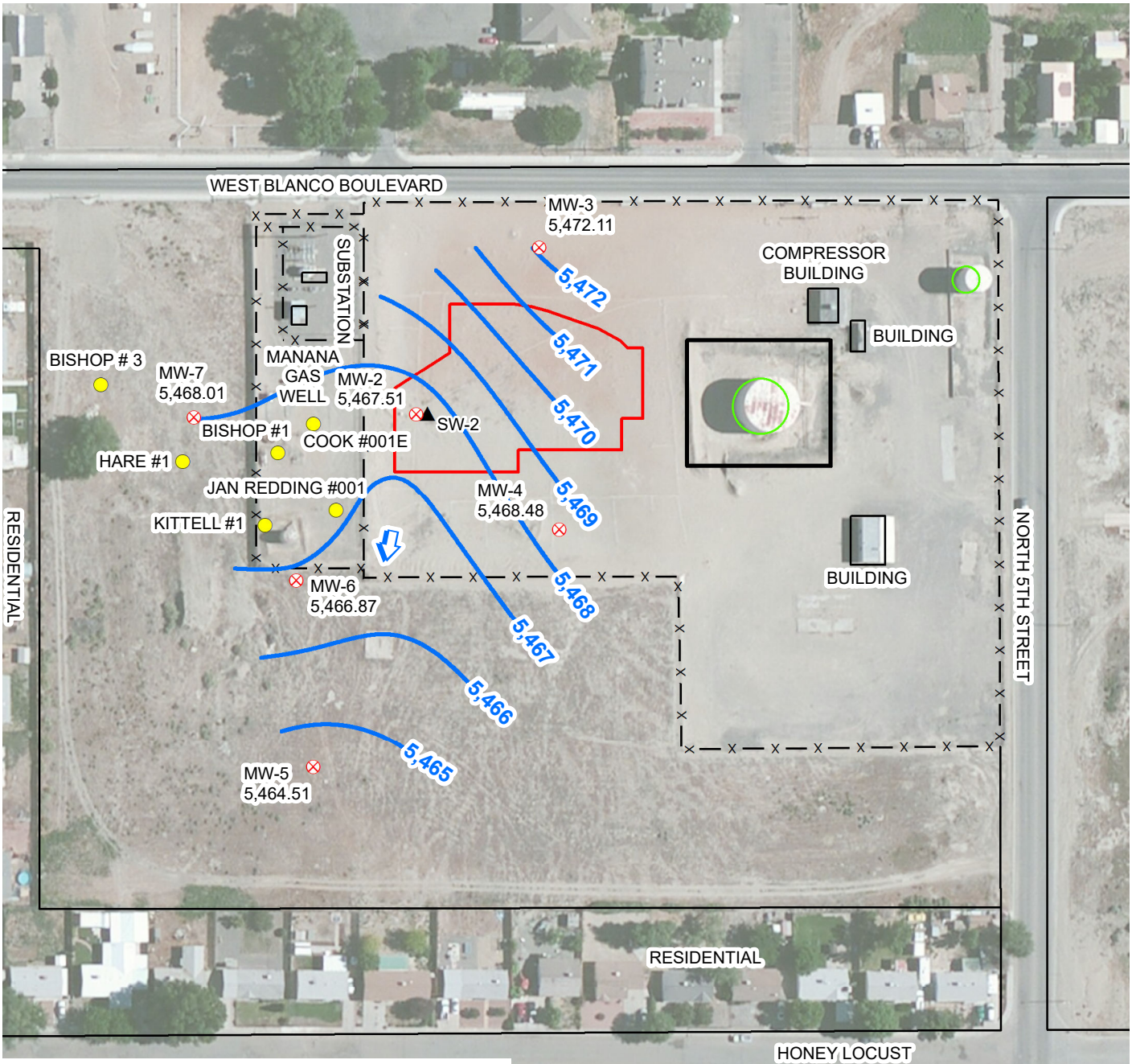

LEGEND

- MONITORING WELL
  GROUNDWATER ELEVATIONS MEASURED IN FEET ABOVE MEAN SEA LEVEL ON NOVEMBER 10, 2020
- HISTORIC OIL AND GAS WELL (APPROXIMATE)
- SPARGE WELL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- x — x FENCE
- RELATIVE GROUNDWATER ELEVATION CONTOUR
  CONTOUR INTERVAL = 1.00 FOOT
- BERM
- FORMER EXCAVATION PERIMETER
- ABOVEGROUND STORAGE TANK (AST)

IMAGE COURTESY OF ESRI

0 140 280
Feet

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FIGURE 4D
GROUNDWATER ELEVATION MAP - NOVEMBER 2020
BLOOMFIELD CRUDE STATION
NWNW SEC 22 T29N R11W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

P:\Western Refining\GIS\MXD\095820003_BLOOMFIELD CRUDE 2020\095820003_BLOOMFIELD_FIG04D_GWE_NOV_2020.mxd

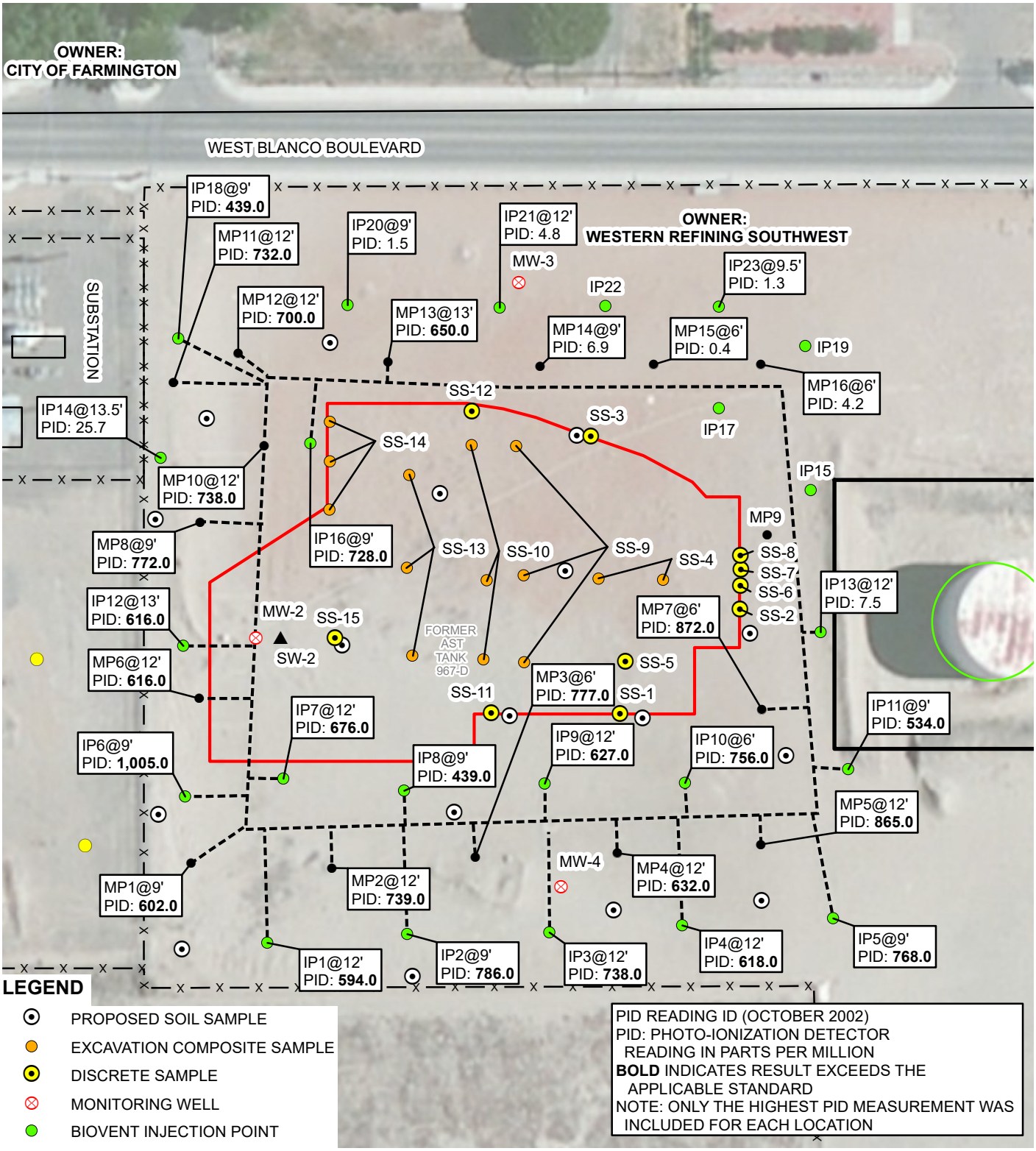

FIGURE 5
PROPOSED BORING LOCATIONS
BLOOMFIELD CRUDE STATION
NWNW SEC 22 T29N R11W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

P:\Marathon Petroleum\GIS\MXD\095820003_BLOOMFIELD CRUDE STATION\095820003_BLOOMFIELD_FIG05_BIOVENT_SYST_PROP_SOIL SAMPLE_LOC_2021.mxd

TABLES

TABLE 1
EXCAVATION SOIL SAMPLE RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Sample ID	Sample Depth (feet)	PID Head Space (ppm)	Total Petroleum Hydrocarbons (mg/kg)**
NMOCD Table 1 Closure Criteria			**100**
SS-1	7	1,789	**10,900**
SS-2	6	1,167	**1,130**
SS-3	7	1,037	**459**
SS-4	11	3.2	<10
SS-5	11	>2,200	NS
SS-6	4.5	1,493	NS
SS-7	6.5	901	NS
SS-8	9.5	246	NS
SS-9	9	13.2	**200**
SS-10	11	13.1	60
SS-11	7	1,986	**8,610**
SS-12	7	1,374	**392**
SS-13	14	NM	**290**
SS-14	11	661	**4,130**
SS-15	18	2,525	NS

Notes:
NS- not sampled
NM - not measured

TABLE 2
BIOVENTING SYSTEM INSTALLATION PID RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Location	Depth (feet)	PID
IP-1	6	57.5
	9	57.5
	12	**594.0**
IP-2	6	13.5
	9	**786.0**
	12.5	**562.0**
IP-3	9	**240.0**
	12	**738.0**
IP-4	6	**102.0**
	9	**415.0**
	12	**618.0**
IP-5	6	1.8
	9	**768.0**
	13	20.3
IP-6	6	**187.0**
	9	**1,005.0**
	13	**200.0**
IP-7	3	2.2
	6	19.0
	9	**655.0**
	12	**676.0**
IP-8	3	29.2
	6	**106.0**
	9	**439.0**
	13	76.0
IP-9	3	**102.0**
	6	**503.0**
	9	74.0
	12	**627.0**
IP-10	6	**756.0**
	9	**724.0**
	12	**212.0**
IP-11	6	**262.0**
	9	**543.0**
	12.5	59.2
IP-12	6	2.9
	9	5.1
	13	**616.0**
IP-13	6	5.6
	9	2.0
	12	7.5
IP-14	6	0.0
	9	0.0
	13.5	25.7
IP-15	NM	NM

TABLE 2
BIOVENTING SYSTEM INSTALLATION PID RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Location	Depth (feet)	PID
IP-16	6	1.6
	9	**728.0**
	13	**675.0**
IP-17	NM	NM
IP-18	3	24.2
	6	**106.0**
	9	**439.0**
	12	10.3
	13	76.0
IP-19	NM	NM
IP-20	9	1.5
	6	1.2
	9	1.0
	12	0.7
IP-21	3	0.4
	6	3.5
	9	0.2
	12	4.8
IP-22	NM	NM
IP-23	6	0.3
	9.5	1.3
MP-1	6	2.3
	9	**602.0**
	13	**203.0**
MP-2	6	69.0
	9	**697.0**
	12	**793.0**
MP-3	6	**777.0**
	9	**146.0**
	12	23.8
MP-4	6	**410.0**
	9	**122.0**
	12	**632.0**
MP-5	6	37.6
	9	**757.0**
	12	**865.0**
MP-6	3	2.3
	6	2.1
	12	**616.0**
MP-7	3	**224.0**
	6	**872.0**
	9	**708.0**
	11	70.7
MP-8	6	30.3
	9	**772.0**
	12	**602.0**

TABLE 2
BIOVENTING SYSTEM INSTALLATION PID RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Location	Depth (feet)	PID
MP-9	NM	NM
MP-10	6	49.1
	9	**733.0**
	12	**738.0**
MP-11	6	0.0
	9	0.0
	12	**732.0**
MP-12	6	6.2
	9	8.9
	12	**700.0**
MP-13	6	6.0
	9	4.9
	13	**650.0**
MP-14	6	1.5
	9	6.9
	12	1.8
MP-15	6	0.4
MP-16	6	4.2
	9	NM
	10.5	NM

Notes:
NM - not measured
ft - feet
PID - photoionization detector

TABLE 3
BIOVENTING PERFORMANCE SOIL SAMPLE ANALYTICAL RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Sample ID	Sample Depth (ft)	Date Sampled	Field Headspace Reading (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Gasoline Range Organics* (mg/kg)	Diesel Range Organics * (mg/kg)	Motor Oil Range Organics * (mg/kg)	Total Petroleum Hydrocarbons ** (mg/kg)
NMOCD Table 1 Closure Criteria			NE	**10**	NE	NE	NE	**50**	NE	NE	NE	**100**
MP3	6	Oct-02	777	2.0	<0.05	<0.05	<0.1	2.0	NA	NA	NA	**750**
		Oct-03	314	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**400**
		Oct-04	0.0	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-05	0	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	39
		Oct-06	4.7	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-07	0.4	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	45
		Oct-08	3.9	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	78	78
		Apr-09	0.9	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jul-09	0.5	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Oct-09	0.5	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jan-10	0.4	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Apr-10	1.9	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jul-10	0.4	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Oct-10	1.3	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jan-11	0.9	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Apr-11	0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	16	<50.0	16
		Jul-11	0	<0.048	<0.048	<0.048	<0.095	<0.095	<4.8	12	<51	12
		Oct-11	0.2	<0.050	<0.050	<0.050	<0.10	<0.10	<5.0	<9.9	<50	<50
		Jan-12	4.7	<0.049	<0.049	<0.049	<0.098	<0.098	<4.9	<9.9	<50	<50
		Apr-12	0.2	<0.48	<0.48	<0.48	<0.097	<0.097	<4.8	<10	<51	<51
MP7	6	Oct-02	872	2.0	<0.05	<0.05	<0.1	2.0	NA	NA	NA	**2,830**
		Oct-03	3946	3.5	<0.05	<0.05	<0.1	3.5	NA	NA	NA	**4,700**
		Oct-04	994.0	3.5	<0.05	<0.05	<0.1	3.5	NA	NA	NA	**2,330**
		Oct-05	443	< 0.13	< 0.13	6.0	32	38	NA	NA	NA	**2,040**
		Oct-06	4.9	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	22
		Oct-07	0.5	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**1,250**
		Oct-08	4.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	730	1,500	**2,230**
		Apr-09	9.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jul-09	2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	460	350	**810**
		Oct-09	1.3	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	960	1,300	**2,260**
		Jan-10	0.3	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	91	130	**221**
		Apr-10	0.6	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	400	340	**740**
		Jul-10	0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	890	1,100	**1,990**
		Oct-10	1.4	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	28	<50	28
		Jan-11	1.3	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	62	99	**161**
		Apr-11	0.3	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	670	930	**1600**
		Jul-11	0	<0.049	<0.049	<0.049	<0.098	<0.098	<4.9	580	650	**1230**
		Oct-11	0.4	<0.047	<0.047	<0.047	<0.094	<0.094	<4.7	180	<240	**180**
		Jan-12	0.3	<0.047	<0.047	<0.047	<0.095	<0.095	<4.7	230	340	**570**
		Apr-12	0	<0.049	<0.049	<0.049	<0.099	<0.099	<4.9	36	<49	36
MP8	9	Oct-02	772	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-03	149	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-04	149.0	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-05	56.2	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-06	4.6	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	28
		Oct-07	0.6	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	70
		Oct-08	3.7	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	55	55
		Apr-09	0.0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jul-09	0.4	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Oct-09	0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jan-10	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Apr-10	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jul-10	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Oct-10	0.4	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jan-11	1.3	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Apr-11	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	20	55	75
		Jul-11	0.2	<0.049	<0.049	<0.049	<0.098	<0.098	<4.9	<10	<51	<51
		Oct-11	0.2	<0.046	<0.046	<0.046	<0.092	<0.092	<4.6	<10	<50	<50
		Jan-12	0.5	<0.049	<0.049	<0.049	<0.097	<0.097	<4.9	<10	<51	<51
		Apr-12	0.3	<0.048	<0.048	<0.048	<0.096	<0.096	<4.8	<4.8	<49	<49
MP11	12	Oct-02	732	2.9	<0.05	5.8	36	44.7	NA	NA	NA	**1,290**
		Oct-03	191	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**157**
		Oct-04	0.0	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-05	7.49	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-06	3.2	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**124**
		Oct-07	0.1	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-08	17.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	60	60
		Apr-09	0.0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jul-09	0.7	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	110	**110**
		Oct-09	0.3	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jan-10	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Apr-10	0.3	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	89	89
		Jul-10	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	28	67	95
		Oct-10	0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	110	150	**260**
		Jan-11	1.4	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	21	<50	21
		Apr-11	0.0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	36	100	**136**
		Jul-11	0.2	<0.049	<0.049	<0.049	<0.098	<0.098	<4.9	19	<49	19
		Oct-11	0.3	<0.049	<0.049	<0.049	<0.097	<0.097	<4.9	56	85	**141**
		Jan-12	0.9	<0.050	<0.050	<0.050	<0.10	<0.10	<5.0	<9.7	<48	<48
		Apr-12	0.0	<0.050	<0.050	<0.050	<0.099	<0.099	<5.0	13	<51	13

TABLE 3
BIOVENTING PERFORMANCE SOIL SAMPLE ANALYTICAL RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Sample ID	Sample Depth (ft)	Date Sampled	Field Headspace Reading (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Gasoline Range Organics* (mg/kg)	Diesel Range Organics * (mg/kg)	Motor Oil Range Organics * (mg/kg)	Total Petroleum Hydrocarbons ** (mg/kg)
IP7	12	Oct-02	676	2.9	<0.05	<0.05	<0.1	2.9	NA	NA	NA	**4,720**
		Oct-03	287	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**1,299**
		Oct-04	123.0	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**139**
		Oct-05	6.2	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	55
		Oct-06	7.4	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**770**
		Oct-07	0.5	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**1,460**
		Oct-08	3.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	64	64
		Apr-09	0.0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jul-09	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Oct-09	0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	16	81	97
		Jan-10	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Apr-10	0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	32	120	**152**
		Jul-10	0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	110	120	**230**
		Oct-10	0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	21	<50	21
		Jan-11	1.4	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Apr-11	0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	60	94	**154**
		Jul-11	0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<9.9	<49	<49
		Oct-11	0.4	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<9.9	<50	<50
		Jan-12	0.7	<0.049	<0.049	<0.049	<0.097	<0.097	<4.9	<9.9	<49	<49
		Apr-12	0.4	<0.048	<0.048	<0.048	<0.096	<0.096	<4.8	<9.7	<49	<49
IP10	6	Oct-02	756	0.42	<0.05	<0.05	<0.1	0.42	NA	NA	NA	**1,470**
		Oct-03	311	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	21
		Oct-04	262.0	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-05	30.3	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-06	13.8	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-07	0.5	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-08	25.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	240	440	**680**
		Apr-09	6.0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jul-09	2.4	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Oct-09	0.9	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jan-10	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	5.2	<10	<50	5.2
		Apr-10	0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	200	210	**410**
		Jul-10	0.5	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Oct-10	0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	60	<50	**60**
		Jan-11	1.9	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Apr-11	0.0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	59	110	**169**
		Jul-11	0	<0.049	<0.049	<0.049	<0.098	<0.098	<4.9	<10	<52	<52
		Oct-11	0.2	<0.050	<0.050	<0.050	<0.10	<0.10	<5.0	<9.8	<49	<49
		Jan-12	0.8	<0.048	<0.048	<0.048	<0.096	<0.096	<4.8	340	620	**960**
		Apr-12	0.2	<0.48	<0.48	<0.48	<0.095	<0.095	<4.8	12	<51	12
IP12	12	Oct-02	616	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**2,470**
		Oct-03	190	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**720**
		Oct-04	253.0	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	ND
		Oct-05	120	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**770**
		Oct-06	3.3	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**520**
		Oct-07	0.3	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	84
		Oct-08	3.3	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	49	160	**209**
		Apr-09	0.0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	55	80	**135**
		Jul-09	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	62	**62**
		Oct-09	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	<10	<50	<50
		Jan-10	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	45	94	**139**
		Apr-10	0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	52	160	**212**
		Jul-10	0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	35	<50	35
		Oct-10	0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	100	160	**260**
		Jan-11	1.8	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	81	97	**178**
		Apr-11	0.0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	31	73	**104**
		Jul-11	0.6	<0.049	<0.049	<0.049	<0.098	<0.098	<4.9	39	<50	39
		Oct-11	0.1	<0.049	<0.049	<0.049	<0.097	<0.097	<4.9	29	<50	29
		Jan-12	0.8	<0.048	<0.048	<0.048	<0.095	<0.095	<4.8	23	<51	23
		Apr-12	11.2	<0.092	<0.092	<0.092	<0.18	<0.18	<9.2	53	77	**130**
IP16	9	Oct-02	728	0.85	<0.05	<0.05	<0.1	0.85	NA	NA	NA	**5,690**
		Oct-03	110	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**2,600**
		Oct-04	0.0	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**540**
		Oct-05	0	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	52
		Oct-06	5	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**210**
		Oct-07	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	NA	NA	NA	**1,500**
		Oct-08	4.2	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	140	310	**450**
		Apr-09	3.8	0.1	<0.05	<0.05	<0.1	0.1	<5.0	380	660	**1,040**
		Jul-09	1.6	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	220	310	**530**
		Oct-09	0.9	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	130	200	**330**
		Jan-10	0.5	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	100	200	**300**
		Apr-10	2.7	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	25	110	**135**
		Jul-10	0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	95	120	**215**
		Oct-10	0	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	360	570	**930**
		Jan-11	0.3	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	58	75	**133**
		Apr-11	0.4	<0.05	<0.05	<0.05	<0.1	<0.1	<5.0	24	70	94
		Jul-11	1.1	<0.049	<0.049	<0.049	<0.098	<0.098	<4.9	150	140	**290**
		Oct-11	0.6	<0.047	<0.047	<0.047	<0.094	<0.094	<4.7	860	810	**1,670**
		Jan-12	0.5	<0.047	<0.047	<0.047	<0.093	<0.093	<4.7	30	60	90
		Apr-12	0.8	<0.048	<0.048	<0.048	<0.097	<0.097	<4.8	30	60	90

Notes:
ft - feet
mg/kg - milligrams per kilogram
NE - not established
NA - not analyzed
ND - not detected
NMOCD - New Mexico Oil Conservation Commission
ppm - parts per million
< - indicates result is less than the stated laboratory method detection limit
Bold indicates value exceeds NMOCD standard
TPH - total petroleum hydrocarbons
* - gasoline range organics = Carbon (C) range 6-C10, diesel range organics = C10-C22, motor oil range organics = C22-C36
** - total petroleum hydrocarbons, summation of Gasoline Range, Diesel Range, and Motor Oil Range Organics

TABLE 4
GROUNDWATER ELEVATION DATA

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Well Number	Wellhead Elevation (feet)	Date	Total Depth (feet)	Depth to Water (feet BTOC)	Depth to PSH (feet BTOC)	PSH Thickness (feet)	Potentiometric Elevation (feet amsl)
MW-2	5485.33	5/2001	18.68	15.26	NP	NP	5470.07
		7/2001	18.68	15.81	NP	NP	5469.52
		5/2002	18.68	15.51	NP	NP	5469.82
		1/2003	18.68	12.53	NP	NP	5472.80
		1/2004	18.68	14.24	NP	NP	5471.09
		1/2005	18.68	14.52	NP	NP	5470.81
		1/2006	18.68	14.67	NP	NP	5470.66
		1/2007	18.68	12.63	NP	NP	5472.70
		1/2008	18.68	11.81	NP	NP	5473.52
		1/2009	18.68	11.75	NP	NP	5473.58
		1/2010	18.68	12.20	NP	NP	5473.13
		1/2011	18.68	12.62	NP	NP	5472.71
		1/2012	18.68	12.41	NP	NP	5472.92
		11/2017	18.68	15.84	NP	NP	5469.49
		1/2018	18.68	17.33	NP	NP	5468.00
		3/19/2020	18.75	16.71	NP	NP	5468.62
		4/9/2020	18.75	17.38	NP	NP	5467.95
		5/20/2020	18.75	17.33	NP	NP	5468.00
		7/14/2020	18.70	17.39	NP	NP	5467.94
		9/2/2020	18.70	18.30	NP	NP	5467.03
		10/28/2020	18.65	17.98	NP	NP	5467.35
		11/10/2020	18.61	17.82	NP	NP	5467.51
		12/22/2020	18.61	17.37	NP	NP	5467.96
MW-3	5488.61	5/2001	18.69	15.60	NP	NP	5473.01
		7/2001	18.69	15.94	NP	NP	5472.67
		5/2002	18.69	15.13	NP	NP	5473.48
		1/2003	18.69	12.89	NP	NP	5475.72
		1/2004	18.69	14.62	NP	NP	5473.99
		1/2005	18.69	15.98	NP	NP	5472.63
		1/2006	18.69	14.07	NP	NP	5474.54
		1/2007	18.69	13.92	NP	NP	5474.69
		1/2008	18.69	12.08	NP	NP	5476.53
		1/2009	18.69	12.17	NP	NP	5476.44
		1/2010	18.69	12.79	NP	NP	5475.82
		1/2011	18.69	13.05	NP	NP	5475.56
		1/2012	18.69	13.25	NP	NP	5475.36
		11/2017	18.69	17.49	NP	NP	5471.12
		1/2018	18.69	18.03	NP	NP	5470.58
		3/19/2020	18.69	17.22	NP	NP	5471.39
		4/9/2020	18.69	16.99	NP	NP	5471.62
		5/20/2020	18.69	17.73	NP	NP	5470.88
		7/14/2020	18.64	18.14	NP	NP	5470.47
		9/2/2020	18.65	17.07	NP	NP	5471.54
		10/28/2020	18.69	16.59	NP	NP	5472.02
		11/10/2020	18.68	16.50	NP	NP	5472.11
		12/22/2020	18.75	16.27	NP	NP	5472.34

TABLE 4
GROUNDWATER ELEVATION DATA

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Well Number	Wellhead Elevation (feet)	Date	Total Depth (feet)	Depth to Water (feet BTOC)	Depth to PSH (feet BTOC)	PSH Thickness (feet)	Potentiometric Elevation (feet amsl)
MW-4	5486.18	5/2001	26.15	16.13	NP	NP	5470.05
		7/2001	26.15	16.43	NP	NP	5469.75
		5/2002	26.15	15.54	NP	NP	5470.64
		1/2003	26.15	13.89	NP	NP	5472.29
		1/2004	26.15	15.08	NP	NP	5471.10
		1/2005	26.15	15.62	NP	NP	5470.56
		1/2006	26.15	14.79	NP	NP	5471.39
		1/2007	26.15	14.15	NP	NP	5472.03
		1/2008	26.15	13.29	NP	NP	5472.89
		1/2009	26.15	13.46	NP	NP	5472.72
		1/2010	26.15	14.11	NP	NP	5472.07
		1/2011	26.15	15.10	NP	NP	5471.08
		1/2012	26.15	14.58	NP	NP	5471.60
		11/2017	26.15	17.56	NP	NP	5468.62
		1/2018	26.15	18.23	NP	NP	5467.95
		3/19/2020	26.21	17.75	NP	NP	5468.43
		4/9/2020	26.21	17.83	NP	NP	5468.35
		5/20/2020	26.21	18.11	NP	NP	5468.07
		7/14/2020	26.12	18.30	NP	NP	5467.88
		9/2/2020	26.12	18.17	NP	NP	5468.01
		10/28/2020	26.14	17.80	NP	NP	5468.38
		11/10/2020	26.12	17.70	NP	NP	5468.48
		12/22/2020	25.89	17.40	NP	NP	5468.78
MW-5	5481.61	5/2001	24.50	16.36	NP	NP	5465.25
		7/2001	24.50	16.36	NP	NP	5465.25
		5/2002	24.50	15.74	NP	NP	5465.87
		1/2003	24.50	13.97	NP	NP	5467.64
		1/2004	24.50	15.17	NP	NP	5466.44
		1/2005	24.50	15.91	NP	NP	5465.70
		1/2006	24.50	15.21	NP	NP	5466.40
		1/2007	24.50	14.22	NP	NP	5467.39
		1/2008	24.50	13.31	NP	NP	5468.30
		1/2009	24.50	13.38	NP	NP	5468.23
		1/2010	24.50	13.63	NP	NP	5467.98
		1/2011	24.50	13.40	NP	NP	5468.21
		1/2012	24.50	13.52	NP	NP	5468.09
		11/2017	24.50	16.50	NP	NP	5465.11
		1/2018	24.50	18.02	NP	NP	5463.59
		3/19/2020	24.50	17.80	NP	NP	5463.81
		4/9/2020	24.50	17.95	NP	NP	5463.66
		5/20/2020	24.50	18.16	NP	NP	5463.45
		7/14/2020	24.44	17.89	NP	NP	5463.72
		9/2/2020	24.42	17.70	NP	NP	5463.91
		10/28/2020	24.42	17.13	NP	NP	5464.48
		11/10/2020	21.46	17.10	NP	NP	5464.51
		12/22/2020	24.46	16.95	NP	NP	5464.66

TABLE 4
GROUNDWATER ELEVATION DATA

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Well Number	Wellhead Elevation (feet)	Date	Total Depth (feet)	Depth to Water (feet BTOC)	Depth to PSH (feet BTOC)	PSH Thickness (feet)	Potentiometric Elevation (feet amsl)
MW-6	5486.18	5/2001	29.37	18.18	NP	NP	5468.00
		7/2001	29.37	18.30	NP	NP	5467.88
		5/2002	29.37	18.05	NP	NP	5468.13
		1/2003	29.37	15.58	NP	NP	5470.60
		1/2004	29.37	16.98	NP	NP	5469.20
		1/2005	29.37	17.67	NP	NP	5468.51
		1/2006	29.37	16.88	NP	NP	5469.30
		1/2007	29.37	15.92	NP	NP	5470.26
		1/2008	29.37	15.03	NP	NP	5471.15
		1/2009	29.37	14.89	NP	NP	5471.29
		1/2010	29.37	15.21	NP	NP	5470.97
		1/2011	29.37	14.96	NP	NP	5471.22
		1/2012	29.37	14.22	NP	NP	5471.96
		11/2017	29.37	18.85	NP	NP	5467.33
		1/2018	29.37	19.93	NP	NP	5466.25
		3/19/2020	29.33	19.55	NP	NP	5466.63
		4/9/2020	29.33	19.78	NP	NP	5466.40
		5/20/2020	29.33	20.15	NP	NP	5466.03
		7/14/2020	29.35	20.02	NP	NP	5466.16
		9/2/2020	29.34	19.87	NP	NP	5466.31
		10/28/2020	29.34	19.40	NP	NP	5466.78
		11/10/2020	29.35	19.31	NP	NP	5466.87
		12/22/2020	29.41	19.06	NP	NP	5467.12
MW-7	5491.86	5/2001	32.79	23.77	NP	NP	5468.09
		7/2001	32.79	23.55	NP	NP	5468.31
		6/2002	32.79	22.38	NP	NP	5469.48
		1/2003	32.79	20.18	NP	NP	5471.68
		1/2004	32.79	22.46	NP	NP	5469.40
		1/2005	32.79	22.50	NP	NP	5469.36
		1/2006	32.79	21.95	NP	NP	5469.91
		1/2007	32.79	20.44	NP	NP	5471.42
		1/2008	32.79	19.69	NP	NP	5472.17
		1/2009	32.79	19.53	NP	NP	5472.33
		1/2010	32.79	19.66	NP	NP	5472.20
		1/2011	32.79	19.30	NP	NP	5472.56
		1/2012	32.79	19.60	NP	NP	5472.26
		11/2017	32.79	23.69	NP	NP	5468.17
		1/2018	32.79	25.74	NP	NP	5466.12
		9/20/2018	32.79	24.05	24.02	0.03	5467.83
		12/12/2018	32.79	23.34	NP	NP	5468.52
		5/15/2019	32.79	25.43	24.09	1.34	5467.50
		7/31/2019	32.79	24.62	24.09	0.53	5467.66
		11/13/2019	32.79	23.63	NP	NP	5468.23
		12/11/2019	32.79	23.60	NP	NP	5468.26
		12/18/2019	32.79	23.69	NP	NP	5468.17
		12/24/2019	32.79	23.70	NP	NP	5468.16
		1/2/2020	33.28	23.85	NP	NP	5468.01
		1/15/2020	33.28	24.02	NP	NP	5467.84

TABLE 4
GROUNDWATER ELEVATION DATA

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Well Number	Wellhead Elevation (feet)	Date	Total Depth (feet)	Depth to Water (feet BTOC)	Depth to PSH (feet BTOC)	PSH Thickness (feet)	Potentiometric Elevation (feet amsl)
MW-7	5491.86	1/22/2020	33.28	24.06	NP	NP	5467.80
		1/29/2020	33.28	24.30	NP	NP	5467.56
		2/5/2020	33.28	24.35	NP	NP	5467.51
		2/12/2020	33.28	24.32	NP	NP	5467.54
		2/19/2020	33.28	24.64	NP	NP	5467.22
		2/26/2020	33.28	24.75	NP	NP	5467.11
		3/4/2020	33.28	24.89	NP	NP	5466.97
		3/11/2020	33.28	24.95	NP	NP	5466.91
		3/18/2020	33.28	25.21	NP	NP	5466.65
		3/19/2020	33.28	25.2	NP	NP	5466.66
		4/9/2020	33.28	25.61	25.59	0.02	5466.27
		5/20/2020	33.28	25.92	25.68	0.24	5466.13
		7/14/2020	33.28	24.97	24.89	0.08	5466.95
		9/2/2020	33.36	24.37	NP	NP	5467.49
		10/28/2020	33.36	23.94	NP	NP	5467.92
		11/10/2020	33.39	23.85	NP	NP	5468.01
		12/22/2020	33.32	23.95	NP	NP	5467.91

Notes:
amsl - above mean sea level
BTOC - below top of casing
NP - no product
PSH - phase separated hydrocarbons
Groundwater Surface Elevation adusted for product depth using 0.8 g/mL unless noted otherwise

TABLE 5
GROUNDWATER ANALYTICAL RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Well Number	Date Sampled	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)
NMWQCC Standard		**5**	**1,000**	**700**	**620**
MW-2	Sep-94	**640**	600	82	**690**
	Apr-95	**220**	280	53	430
	Sep-99	**NSP**	**NSP**	**NSP**	**NSP**
	Dec-99	**NSP**	**NSP**	**NSP**	**NSP**
	May-01	**NSP**	**NSP**	**NSP**	**NSP**
	May-02	**NSP**	**NSP**	**NSP**	**NSP**
	Jan-03	**1,700**	ND	650	**3,200**
	Jan-04	**1,100**	ND	340	**1,800**
	Jan-05	**430**	ND	360	**1,000**
	Jan-06	**250**	ND	410	**790**
	Sep-06	**230**	50	290	**640**
	Jan-07	**8.7**	9.7	16	55
	Apr-07	**7.8**	6.0	61	110
	Jul-07	4.2	20	30	68
	Oct-07	0.9	18	120	180
	Jan-08	4.4	45	24	100
	May-08	0.9	12	<0.5	17
	Aug-08	1.1	7.3	14	28
	Nov-08	1.7	2.0	7.3	15
	Jan-09	1.6	ND	2.1	6.9
	Feb-09	<1.0	<1.0	2.3	7.7
	May-09	1.1	2.1	1.0	6.8
	Aug-09	1.2	<1.0	<1.0	2.0
	Nov-09	<1.0	<1.0	<1.0	<2.0
	Jan-10	<1.0	<1.0	<1.0	<2.0
	Feb-10	<1.0	<1.0	<1.0	<2.0
	Jan-11	<1.0	<1.0	<1.0	2.5
	Jan-12	<1.0	<1.0	<1.0	<2.0
	Mar-13	<1.0	<1.0	<2.0	<2.0
	Nov-17	0.074 J	<0.064	<0.093	<0.32
	May-18	<1.0	<1.0	<1.0	<1.5
MW-3	Sep-94	ND	ND	ND	ND
	Apr-95	ND	ND	ND	ND
	Sep-99	ND	ND	ND	ND
	Dec-99	ND	ND	ND	ND
	May-01	ND	ND	ND	ND
	May-02	ND	ND	ND	ND
	Jan-03	ND	ND	ND	ND
	Jan-04	ND	ND	ND	ND
	Jan-05	ND	ND	ND	ND
	Jan-06	ND	ND	ND	ND
	Jan-07	0.8	ND	ND	ND
	Jan-08	ND	ND	ND	ND
	Jan-09	ND	ND	ND	ND
	Jan-10	<1.0	<1.0	<1.0	<2.0
	Jan-11	<1.0	<1.0	<1.0	<2.0
	Jan-12	<1.0	<1.0	<1.0	<2.0
	Mar-13	<1.0	<1.0	<2.0	<2.0
	Nov-17	<0.062	<0.064	<0.093	<0.32
	May-18	<1.0	<1.0	<1.0	<1.5

TABLE 5
GROUNDWATER ANALYTICAL RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Well Number	Date Sampled	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)
MW-4	Sep-94	2.1	ND	ND	1.2
	Apr-95	ND	ND	ND	ND
	Sep-99	ND	ND	ND	ND
	Dec-99	ND	ND	ND	ND
	May-01	ND	ND	ND	ND
	May-02	ND	ND	ND	ND
	Jan-03	ND	ND	ND	ND
	Jan-04	ND	ND	ND	ND
	Jan-05	ND	ND	ND	ND
	Jan-06	ND	ND	ND	ND
	Jan-07	ND	ND	ND	ND
	Jan-08	ND	ND	ND	ND
	Jan-09	ND	ND	ND	ND
	Jan-10	<1.0	<1.0	<1.0	<2.0
	Jan-11	<1.0	<1.0	<1.0	<2.0
	Jan-12	<1.0	<1.0	<1.0	<2.0
	Mar-13	<1.0	<1.0	<2.0	<2.0
	Nov-17	<0.062	<0.064	<0.093	<0.32
	May-18	<1.0	<1.0	<1.0	<1.5
MW-5	Apr-95	ND	ND	ND	ND
	Sep-99	ND	ND	ND	ND
	Dec-99	ND	ND	ND	ND
	May-01	ND	ND	ND	ND
	May-02	ND	ND	ND	ND
	Jan-03	ND	ND	ND	ND
	Jan-04	ND	ND	ND	1.1
	Jan-05	ND	ND	ND	ND
	Jan-06	ND	ND	ND	ND
	Jan-07	ND	ND	ND	ND
	Jan-08	ND	ND	ND	ND
	Jan-09	ND	ND	ND	ND
	Jan-10	<1.0	<1.0	<1.0	<2.0
	Jan-11	<1.0	<1.0	<1.0	<2.0
	Jan-12	<1.0	<1.0	<1.0	<2.0
	Mar-13	<1.0	<1.0	<1.0	<2.0
	Nov-17	<0.062	<0.064	<0.093	<0.32
	May-18	<1.0	<1.0	<1.0	<1.5
MW-6	May-01	**12**	15.0	13	83
	May-02	ND	ND	0.53	1.4
	Oct-02	ND	ND	ND	3.2
	Jan-03	**6**	20.0	87	350
	Jul-03	ND	2.7	3.2	16
	Sep-03	0.8	3.7	4	24
	Jan-04	0.9	0.6	2.9	16
	Jan-05	ND	ND	ND	ND
	Jan-06	ND	ND	14	32
	Jan-07	ND	ND	3.6	9.1
	Jan-08	0.9	11.0	130	**930**
	Jan-09	ND	ND	66	510
	Jan-10	<5.0	<5.0	<5.0	<10
	Jan-11	<10.0	<10.0	140	**960**
	Jan-12	<10.0	<10.0	61	220
	Mar-13	<2.0	<2.0	<2.0	<4.0
	Nov-17	<0.062	<0.064	<0.093	<0.32
	May-18	<1.0	<1.0	<1.0	<1.5

TABLE 5
GROUNDWATER ANALYTICAL RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Well Number	Date Sampled	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)
MW-7	May-01	**2,400**	ND	380	**2,800**
	Jun-02	**2,000**	ND	140	**1,100**
	Oct-02	**1,100**	ND	79	490
	Jan-03	**3,200**	ND	400	**3,100**
	Jan-04	**3,300**	ND	460	**3,300**
	Jan-05	**1,600**	ND	220	**1,500**
	Jan-06	**1,400**	ND	280	**1,500**
	Jan-07	**1,200**	ND	450	**2,500**
	Jan-08	**750**	ND	520	**3,100**
	Jan-09	**570**	ND	450	**2,800**
	Jan-10	**270**	<20	460	**2,500**
	Jan-11	**140**	<20	470	**2,400**
	Jan-12	**62**	<20	640	**3,500**
	Mar-13	**44**	<20	210	**920**
	Nov-17	0.64 J	<5.0	75	330
	May-18	**NSP**	**NSP**	**NSP**	**NSP**
	May-19	**NSP**	**NSP**	**NSP**	**NSP**
	Feb-20	<5.0	<5.0	14	24
	Mar-20	<1.0	<1.0	2.5	6.6

Notes:
µg/L - micrograms per liter
D - sample diluted due to matrix
NE - not established
ND - not detected
NMWQCC - New Mexico Water Quality Control Commission
NS - not sampled
< - indicates result is less than the stated laboratory method detection limit
NSP - not sampled due to product in well
Bold indicates value exceeds NMWQCC standard

TABLE 6
GROUNDWATER CHEMISTRY ANALYTICAL RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Well Number	Year	Lab pH (su)	Conductivity (µmhos/cm)	TDS (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sodium Absorption Ratio	Hydroxide (mg/L)	Sulfate (mg/L)	Sodium (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Barium (mg/L)	Potassium (mg/L)	Iron (mg/L)	Nitrate/ Nitrite (mg/L)
NMWQCC Standard		**6-9**	NE	**1,000**	NE	NE	NE	NE	**250**	NE	NE	**600**	NE	NE	NE	**0.2**	**2.0**	NE	**1.0**	NE
MW-2	1994	6.60	4,920	**3,049**	957	NA	1,170	0	**1,050**	11.78	0	24	828	325	30	NA	NA	1.4	NA	NA
	1995	6.70	5,010	**3,180**	910	885	1,110	0	**884**	12.4	0	591	846	305	30	NA	NA	2.0	NA	NA
	2001	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	NA	**NSP**	**NSP**	**NSP**
	2002	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	**NSP**	NA	**NSP**	**NSP**	**NSP**
	2003	7.00	3,230	**3,220**	1,520	416	1,850	<1	51	NA	<1	369	660	133	20	NA	NA	1	NA	NA
	2004	7.00	3,100	**2,000**	1,500	420	1,500	<1	85	NA	<1	130	680	140	18	**3.1**	NA	3	**11**	<0.10
	2005	7.60	3,000	**2,000**	1,300	430	1,300	7	110	NA	<1	58	620	140	19	**3.1**	NA	3.8	**11**	<0.10
	2006	7.40	3,400	**2,000**	1,400	440	1,400	4.3	130	NA	<1	150	610	150	18	**1.3**	NA	2.4	**4**	<0.10
	2007	7.40	5,490	**4,580**	726	1,190	724	2.57	43.5	NA	<1	**2,460**	869	476	59.5	**5.0**	NA	12.5	**16.3**	NA
	2008	7.50	5,100	**4,350**	543	1,220	534	<1	42.3	NA	<1	**2,468**	739	463	49.5	**6.76**	NA	2.93	**10.7**	ND
	2009	7.34	4,300	**3,900**	760	NA	760	ND	42	NA	NA	**2,000**	720	380	42	**0.25**	0.038	2.3	ND	ND
	2010	7.39	3,700	**3,160**	900	870	900	ND	60	NA	NA	**1,500**	690	290	34	**7.4**	0.18	1.8	**1.2**	ND
	2011	7.49	3,700	**2,750**	1,300	880	1,300	<5.0	52	NA	NA	**920**	740	290	34	**6.1**	0.21	6.9	**32**	NA
	2012	7.80	3,500	**2,720**	1,300	NA	1,300	<5.0	40	NA	NA	**890**	710	220	26	**3.7**	0.079	2.5	**7.6**	0.13
	2013	7.56	4,100	**3,190**	1,300	790	1300	<5.0	45	NA	NA	**1,000**	740	270	30	**3.8**	0.083	2.9	NA	<0.1
	2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	1994	7.10	4,250	**3,413**	521	NA	635	0	48	8.14	0	**1,920**	661	439	37	NA	NA	1.4	NA	NA
	1995	7.20	4,420	**3,860**	523	1,480	638	0	56	7.36	0	**2,060**	652	523	43	NA	NA	3.1	NA	NA
	2001	7.30	4,500	**3,960**	459	1,220	559	<1	78	NA	<1	**2,250**	711	423	40.4	NA	NA	2.5	NA	NA
	2002	7.00	4,440	**3,820**	358	1,290	437	<1	46	NA	<1	**2,520**	705	446	43	NA	NA	0.6	NA	NA
	2003	7.00	4,320	**3,660**	560	1,230	683	<1	56	NA	<1	**2,330**	671	428	39.4	NA	NA	1.6	NA	NA
	2004	7.30	4,500	**4,000**	560	1,400	560	1	44	NA	<1	**2,300**	780	320	44	**0.79**	NA	3.6	**3.9**	<0.10
	2005	7.40	4,700	**2,000**	560	1,400	560	1	37	NA	<1	**2,100**	690	450	47	**0.79**	NA	3.9	**3.9**	<0.10
	2006	7.50	5,400	**3,600**	580	1,300	580	1.5	37	NA	<1	**2,200**	680	450	47	**0.38**	NA	3.7	**4.4**	0.36
	2007	7.50	4,780	**3,750**	565	1,120	563	1.92	36.2	NA	<1	**1,920**	649	449	43	**0.41**	NA	10.36	**1.28**	NA
	2008	7.50	4,330	**3,600**	627	1,090	626	1.32	34.8	NA	<1	**1,690**	594	419	39.8	**0.394**	NA	2.36	**1.91**	ND
	2009	7.33	4,000	**3,700**	580	NA	580	ND	37	NA	NA	**2,000**	600	390	37	**6.6**	0.049	2.2	**3.2**	3.1
	2010	7.47	3,500	**3,430**	530	1,100	530	ND	35	NA	NA	**1,800**	600	370	36	0.15	0.024	1.5	ND	5.8
	2011	7.39	4,100	**3,400**	560	1,300	560	<2.0	39	NA	NA	**2,000**	660	450	39	**1.2**	0.075	4.2	**7**	NA
	2012	7.75	4,000	**3,470**	560	NA	560	<2.0	37	NA	NA	**2,400**	620	410	39	**0.55**	0.033	2.3	**2.9**	14
	2013	7.66	4,000	**3,090**	540	960	540	<2.0	38	NA	NA	**1,900**	660	330	36	**0.72**	0.11	4.6	NA	8.9
	2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	1994	7.00	5,420	**4,389**	576	NA	703	0	175	10.88	0	**2,470**	907	439	53	NA	NA	3.5	NA	NA
	1995	7.20	5,360	**4,530**	577	1,520	701	0	163	10.1	0	**2,420**	907	523	53	NA	NA	4.3	NA	NA
	2001	7.10	5,090	**4,630**	490	1,460	597	<1	77	NA	<1	**2,680**	900	500	52.5	NA	NA	4.2	NA	NA
	2002	6.90	5,140	**4,420**	358	1,310	437	<1	47	NA	<1	**2,930**	873	449	47	NA	NA	2.6	NA	NA
	2003	7.00	4,460	**3,850**	400	1,070	488	<1	40	NA	<1	**2,570**	667	361	40.8	NA	NA	2.8	NA	NA
	2004	7.30	4,500	**3,900**	400	1,200	400	3	27	NA	<1	**2,500**	810	390	44	**5.2**	NA	6.7	**18**	<0.10
	2005	7.30	4,900	**4,000**	420	1,300	420	1	30	NA	<1	**2,200**	740	450	49	NA	NA	10	**18**	<0.10
	2006	7.40	5,400	**3,700**	450	1,200	450	5.9	31	NA	<1	**2,500**	790	410	47	**5.4**	NA	7	**3.8**	<0.10
	2007	7.20	4,700	**3,690**	455	1,020	454	1.17	54.5	NA	<1	**1,730**	678	410	43.3	**5.73**	NA	12.1	0.56	NA
	2008	7.60	4,500	**3,710**	458	1,040	457	<1	<5	NA	<1	**1,790**	637	394	41.2	**5.41**	NA	3.55	**2.72**	ND
	2009	7.19	4,400	**4,000**	450	NA	450	ND	36	NA	NA	**2,400**	670	400	42	**4.7**	0.037	3.7	ND	ND
	2010	7.49	4,300	**4,060**	490	1,200	490	ND	50	NA	NA	**2,400**	740	420	45	**4.9**	0.024	3.2	ND	ND
	2011	7.33	4,600	**4,010**	460	1,600	460	<2.0	36	NA	NA	**2,600**	760	540	55	**8.2**	0.026	5.4	**1.8**	NA
	2012	7.62	4,500	**4,050**	470	NA	470	<2.0	30	NA	NA	**2,700**	690	480	51	**8.8**	0.11	6.6	**15**	0.18
	2013	7.40	5,000	**4,180**	510	1,400	510	<2.0	41	NA	NA	**2,500**	760	480	58	**7.0**	0.35	12	NA	0.16
	2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 6
GROUNDWATER CHEMISTRY ANALYTICAL RESULTS

BLOOMFIELD CRUDE STATION
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, LLC

Well Number	Year	Lab pH (su)	Conductivity (µmhos/cm)	TDS (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sodium Absorption Ratio	Hydroxide (mg/L)	Sulfate (mg/L)	Sodium (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Barium (mg/L)	Potassium (mg/L)	Iron (mg/L)	Nitrate/ Nitrite (mg/L)
MW-5	1995	6.90	6,000	**4,410**	775	NA	945	0	**996**	8.84	0	**1,390**	861	634	51	NA	NA	6.6	NA	NA
	2001	6.70	7,000	**5,230**	757	2,010	923	<1	**1,320**	NA	<1	**1,230**	924	700	63.2	NA	NA	5.6	NA	NA
	2002	6.50	6,880	**4,810**	567	1,880	692	<1	**1,200**	NA	<1	**1,230**	855	661	55.3	NA	NA	4.9	NA	NA
	2003	6.60	6,910	**5,080**	830	1,780	1,010	<1	**1,090**	NA	<1	**1,330**	829	616	58.1	NA	NA	4.8	NA	NA
	2004	6.80	6,700	**4,600**	840	2,000	840	1	**1,300**	NA	<1	**1,400**	1,000	690	57	**11**	NA	11	**4.3**	<0.10
	2005	7.00	6,800	**4,800**	870	1,900	870	<1	**1,100**	NA	<1	**1,200**	910	670	60	**11**	NA	10	**4.3**	<0.10
	2006	7.10	8,000	**4,300**	990	1,800	990	<1	**1,000**	NA	<1	**1,200**	920	630	58	**58**	NA	12	**11**	<0.10
	2007	7.30	6,630	**4,750**	915	1,320	914	1.11	**884**	NA	<1	**1,800**	896	621	57.6	**10.8**	NA	16.6	0.5	NA
	2008	7.10	6,750	**4,780**	933	1,510	932	<1	109	NA	<1	**1,310**	834	585	51.5	**10.7**	NA	5.11	**1.32**	ND
	2009	6.80	6,200	**5,700**	840	NA	840	ND	**1,000**	NA	840	**1,900**	860	570	50	**10**	0.07	5.6	NA	ND
	2010	7.26	5,600	**4,760**	770	1,600	770	ND	**880**	NA	NA	**1,900**	850	560	52	**9.7**	0.054	4.9	0.22	ND
	2011	7.18	5,800	**4,370**	780	1,600	780	<2.0	**350**	NA	NA	**900**	850	570	48	**9.4**	0.038	5.6	**1.7**	NA
	2012	7.12	4,700	**3,880**	680	NA	680	<2.0	**510**	NA	NA	**1900**	810	520	45	**7.5**	0.086	5.9	**8.2**	0.26
	2013	7.10	6,100	**4,480**	820	1,600	820	<2.0	**680**	NA	NA	**1,900**	830	540	50	**9.5**	0.12	6.8	NA	<2.0
	2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	2001	6.90	5,470	**4,508**	740	1,550	903	<1	80	NA	<1	**2,780**	1,030	534	53.3	NA	NA	6.3	NA	NA
	2002	6.80	4,460	**3,560**	669	932	816	<1	55	NA	<1	**1,900**	830	319	33	NA	NA	2.5	NA	NA
	2003	7.00	3,070	**2,180**	1,140	602	1,390	<1	79	NA	<1	540	514	203	23.1	NA	NA	2.1	NA	NA
	2004	7.20	4,100	**3,000**	1,000	1,100	1,000	<1	96	NA	<1	**1,400**	870	390	63	**4**	NA	29	**23**	<0.10
	2005	7.20	4,100	**3,000**	1,100	670	1,100	2	93	NA	<1	**940**	670	220	28	**4**	NA	6.7	**23**	<0.10
	2006	7.20	7,000	**4,500**	800	1,400	800	3.6	82	NA	<1	**2,600**	1,200	440	68	**11**	NA	24	**87**	<0.10
	2007	7.10	7,460	**6,070**	678	1,320	676	2.23	57.5	NA	<1	**3,140**	1,500	529	65.1	**13.8**	NA	17.3	**17.7**	NA
	2008	7.50	2,840	**1,920**	1,140	533	1,140	1.25	<1	NA	1.25	312	442	195	25.6	**2.62**	NA	2.83	**24.5**	ND
	2009	7.14	2,800	**1,900**	1,100	NA	1,100	ND	180	NA	NA	260	430	180	23	**1.9**	1.2	2.2	**9.1**	ND
	2010	7.53	2,900	**2,130**	1,000	630	1,000	ND	170	NA	NA	500	510	210	26	**3.1**	**2.3**	1.6	**6.8**	ND
	2011	7.50	3,100	**1,890**	1,100	980	1,100	<2.0	150	NA	NA	490	570	320	46	**5.1**	**4.9**	12	**99**	NA
	2012	7.62	3,400	**2,560**	1,100	NA	1,100	<2.0	130	NA	NA	**970**	580	280	37	**4.2**	0.5	6.4	**100**	4
	2013	7.46	3,600	**2,630**	1,100	1000	1,100	<2.0	120	NA	NA	**920**	580	290	72	**6.8**	1.8	25	NA	<0.1
	2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	2001	6.70	2,160	**1,710**	600	843	732	<1	52	NA	<1	**642**	234	296	25.6	NA	NA	1.6	NA	NA
	2002	6.80	1,870	**1,570**	432	758	527	<1	20	NA	<1	**700**	151	258	27.8	NA	NA	2.2	NA	NA
	2003	6.70	1,310	810	696	531	849	<1	35	NA	<1	57	126	152	36.8	NA	NA	1	NA	NA
	2004	6.80	1,400	920	720	520	720	<1	13	NA	<1	120	170	170	23	**3**	NA	7	**27**	<0.10
	2005	7.00	1,500	930	740	540	740	1	15	NA	<1	190	150	180	20	**0.3**	NA	3.3	**27**	<0.10
	2006	7.40	1,800	**1,200**	750	660	750	3.2	16	NA	<1	310	170	220	23	**2.9**	NA	3.3	**49**	<0.10
	2007	7.10	1,460	858	638	402	636	1.8	22.4	NA	<1	127	124	161	20.2	**2.34**	NA	8.84	**32.7**	NA
	2008	7.30	1,320	810	748	369	747	<1	18.1	NA	<1	50.9	120	139	15.4	**1.6**	NA	1.2	**14.4**	ND
	2009	7.03	1,200	750	680	NA	680	ND	22	NA	NA	6.8	140	150	17	**1.5**	1.4	0.9	**11**	ND
	2010	7.63	1,200	762	650	390	650	ND	24	NA	NA	6.5	130	130	15	**1.2**	**2.4**	ND	**8.4**	ND
	2011	7.50	1,300	734	670	460	670	<2.0	26	NA	NA	7.8	130	150	19	**1.3**	**2.7**	1.3	**47**	NA
	2012	7.75	1,300	800	720	NA	720	<2.0	24	NA	NA	4.4	160	150	17	**0.89**	**2.1**	2.6	**22**	<0.20
	2013	7.58	1,600	**1,100**	670	580	670	<2.0	22	NA	NA	210	160	200	22	**1.5**	**4.9**	3.1	NA	<0.1
	2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
mg/L - milligrams per liter
NE - not established
NA - not analyzed
ND - not detected
< - indicates value is less than laboratory detection limit
NSP - not sampled due to product in the well
Bold indicates value exceeds NMWQCC standard
SU - standard units
TDS - Total Dissolved Solids
umhos/cm - microhms per centimeter
NMWQCC - New Mexico Water Quality Control Commission

ENCLOSURE A –ANALYTICAL LABORATORY REPORTS

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 21, 2020

Kelly Robinson

Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4135
FAX (505) 632-3911

RE: Bloomfield Crude Station OrderNo.: 2002506

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 2/13/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2002506**
Date Reported: **2/21/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. **Client Sample ID:** MW7
Project: Bloomfield Crude Station **Collection Date:** 2/12/2020 11:55:00 AM
Lab ID: 2002506-001 **Matrix:** AQUEOUS **Received Date:** 2/13/2020 8:04:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	5.0	D	µg/L	5	2/21/2020 2:17:27 AM	B66690
Toluene	ND	5.0	D	µg/L	5	2/21/2020 2:17:27 AM	B66690
Ethylbenzene	14	5.0	D	µg/L	5	2/21/2020 2:17:27 AM	B66690
Xylenes, Total	24	10	D	µg/L	5	2/21/2020 2:17:27 AM	B66690
Surr: 4-Bromofluorobenzene	96.7	80-120	D	%Rec	5	2/21/2020 2:17:27 AM	B66690

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2002506**

21-Feb-20

Client: Western Refining Southwest, Inc.

Project: Bloomfield Crude Station

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **B66690**	RunNo: **66690**
Prep Date:	Analysis Date: **2/20/2020**	SeqNo: **2292372** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	18		20.00		91.5	80	120			

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **B66690**	RunNo: **66690**
Prep Date:	Analysis Date: **2/20/2020**	SeqNo: **2292373** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.5	80	120			
Toluene	19	1.0	20.00	0	97.2	80	120			
Ethylbenzene	19	1.0	20.00	0	97.3	80	120			
Xylenes, Total	59	2.0	60.00	0	98.6	80	120			
Surr: 4-Bromofluorobenzene	19		20.00		93.5	80	120			

Sample ID: **2002506-001ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW7**	Batch ID: **B66690**	RunNo: **66690**
Prep Date:	Analysis Date: **2/21/2020**	SeqNo: **2292377** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	91	5.0	100.0	0	91.0	80	120			
Toluene	93	5.0	100.0	0	93.2	80	120			
Ethylbenzene	110	5.0	100.0	14.18	96.4	80	120			
Xylenes, Total	310	10	300.0	23.61	96.1	68.3	130			
Surr: 4-Bromofluorobenzene	96		100.0		95.7	80	120			

Sample ID: **2002506-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW7**	Batch ID: **B66690**	RunNo: **66690**
Prep Date:	Analysis Date: **2/21/2020**	SeqNo: **2292378** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	93	5.0	100.0	0	92.6	80	120	1.76	20	
Toluene	94	5.0	100.0	0	94.4	80	120	1.30	20	
Ethylbenzene	110	5.0	100.0	14.18	96.8	80	120	0.334	20	
Xylenes, Total	310	10	300.0	23.61	97.1	68.3	130	0.935	20	
Surr: 4-Bromofluorobenzene	100		100.0		102	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Western Refining Southw** Work Order Number: **2002506** RcptNo: **1**

Received By: **Leah Baca** **2/13/2020 8:04:00 AM** Leah S Baca

Completed By: **Isaiah Ortiz** **2/13/2020 8:55:38 AM** I-Ok

Reviewed By: SR 2/13/20

Chain of Custody

1. Is Chain of Custody sufficiently complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: YG 2/13/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.2	Good	Yes			

Chain-of-Custody Record

Client: Western Refining

Mailing Address: 50 CR 4990
Bloomfield NM 87413

Phone #: 505-632-4135

email or Fax#:

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

Accreditation: ☒ Az Compliance
☐ NELAC ☐ Other

☒ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Bloomfield Crude Station

Project #:

Project Manager:

Sampler: Travis Short

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 0.1+0.1=0.2

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2002506
2/12	1155	H_2O	MW 7	3-VOA	HCl	-001

Analysis Request

BTEX ~~MTBE / TMB's (8021)~~	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
X									

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
2/12	1500				2/12/22	1560
2/12	1743			courier	2/13/20	8:04

Remarks: bill to Western PO# 4500081397

cc dhencmann@LtenV.com

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

March 27, 2020

Gregory J. McCartney
Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413
TEL: (419) 421-2338
FAX:

RE: Bloomfield Crude Station OrderNo.: 2003934

Dear Gregory J. McCartney:

Hall Environmental Analysis Laboratory received 1 sample(s) on 3/20/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2003934**
Date Reported: **3/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. **Client Sample ID:** MW 7
Project: Bloomfield Crude Station **Collection Date:** 3/19/2020 12:15:00 PM
Lab ID: 2003934-001 **Matrix:** AQUEOUS **Received Date:** 3/20/2020 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **JMR**	
Benzene	ND	1.0		µg/L	1	3/24/2020 2:45:34 PM	R67530
Toluene	ND	1.0		µg/L	1	3/24/2020 2:45:34 PM	R67530
Ethylbenzene	2.5	1.0		µg/L	1	3/24/2020 2:45:34 PM	R67530
Xylenes, Total	6.6	1.5		µg/L	1	3/24/2020 2:45:34 PM	R67530
Surr: 1,2-Dichloroethane-d4	89.6	70-130		%Rec	1	3/24/2020 2:45:34 PM	R67530
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	1	3/24/2020 2:45:34 PM	R67530
Surr: Dibromofluoromethane	96.0	70-130		%Rec	1	3/24/2020 2:45:34 PM	R67530
Surr: Toluene-d8	95.8	70-130		%Rec	1	3/24/2020 2:45:34 PM	R67530

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003934**

27-Mar-20

Client: Western Refining Southwest, Inc.

Project: Bloomfield Crude Station

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **R67514**	RunNo: **67514**
Prep Date:	Analysis Date: **3/23/2020**	SeqNo: **2330424** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	8.8		10.00		88.1	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.1	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.3	70	130			
Surr: Toluene-d8	10		10.00		99.7	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **R67514**	RunNo: **67514**
Prep Date:	Analysis Date: **3/23/2020**	SeqNo: **2330442** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	8.5		10.00		85.2	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.3	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.8	70	130			
Surr: Toluene-d8	9.7		10.00		97.2	70	130			

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **R67530**	RunNo: **67530**
Prep Date:	Analysis Date: **3/24/2020**	SeqNo: **2331948** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.0	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Ethylbenzene	21	1.0	20.00	0	106	70	130			
Xylenes, Total	63	1.5	60.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	8.8		10.00		87.6	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.5	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.7	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **R67530**	RunNo: **67530**
Prep Date:	Analysis Date: **3/24/2020**	SeqNo: **2331959** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	7.8		10.00		78.2	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003934**

27-Mar-20

Client: Western Refining Southwest, Inc.

Project: Bloomfield Crude Station

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **R67530**	RunNo: **67530**
Prep Date:	Analysis Date: **3/24/2020**	SeqNo: **2331959** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	9.9		10.00		98.7	70	130			
Surr: Toluene-d8	9.8		10.00		98.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Western Refining Southw** Work Order Number: **2003934** RcptNo: **1**

Received By: **Yazmine Garduno** **3/20/2020 8:05:00 AM**

Completed By: **Juan Rojas** **3/20/2020 9:07:18 AM**

Reviewed By: YG 3/20/20

Chain of Custody

1. Is Chain of Custody sufficiently complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: DAD 3/20/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good				

Chain-of-Custody Record

Client: Western Refining
Greg McCartney
Mailing Address: 50 Rd 4990
Bloomfield, NM 87413
Phone #: 505 632 8013
email or Fax#: gjmccartney@marathonpetroleum.com
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☒ EDD (Type) PDF

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: Bloomfield Crude Station
Project #: 095820003
Project Manager: Stuart Hyde
Sampler: Travis Short
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 1.3 0.1 = 1.2

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2003934	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
3/19	1215	H2O	MW 7	3 (VOA's)	HCl	-001	X									

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3/19	1245		Grant Walls		3/19/20	1245
3/19/20	1820	Austin Walters		courier	3/20/20	0905

Remarks: Please CC' Shyde@Lenv.com
TShort@Lenv.com

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 61605

CONDITIONS

Operator:	OGRID:
Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	267595
	Action Number: 61605
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Review of 2020 Annual Report: Content satisfactory 1. Continue as stated within the recommendations of the aforementioned report. a. Collect confirmation soil samples from the Site at the locations presented on Figure 5 of the report b. Create logs of all bore holes with standardized data collection information c. Collect a minimum of 2 samples per boring and analyze for TPH and BTEX d. Continue quarterly gauging of wells MW-2 through MW-7 e. Submit next annual report to OCD no later than March 31, 2022.	1/14/2022