

APPROVED

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By Nelson Velez at 11:08 am, Jan 03, 2022



September 30, 2021

Mr. Oakley Hayes
Environmental Specialist
Harvest Four Corners
1755 Arroyo Drive
Bloomfield, New Mexico 87413

**Subject: 2020 Annual Groundwater Report
Florance 47X
RP Number 3RP-317-0
San Juan County, New Mexico**

Review of 2020 Annual Groundwater Report: Content satisfactory

1. Continue with future work as stated within 2020 Annual Groundwater Report.
 - a. monthly site visits for O&M purposes
 - b. groundwater monitoring through quarterly well gauging
 - c. annual groundwater sampling for laboratory analysis of BTEX compounds
 - d. Submit the Annual Monitoring Report to the OCD no later than March 31, 2022

Dear Mr. Hayes,

WSP USA Inc. (WSP), on behalf of Harvest Four Corners, LLC (Harvest) has prepared this report detailing annual groundwater monitoring activities completed between January 2020 and December 2020 at the Florance #47X (Site), Remediation Permit (RP) Number 3RP-317-0. The scope of work (SOW) for this project was to continue phase-separated hydrocarbon (PSH) recovery and monitoring of petroleum hydrocarbon impacts to groundwater resulting from a release involving a former earthen dehydrator pit.

LOCATION

The Site is located at latitude 36.843195 and longitude -107.800839 in Unit G, Section 5, Township 30 North, Range 9 West (Figure 1). The Site is located in Crow Canyon, a tributary to Pump Canyon, in the San Juan Basin in San Juan County, New Mexico.

SITE HISTORY

Groundwater at the Site is impacted by petroleum hydrocarbons due to a release from a former earthen dehydrator pit. In June 1996, source material was excavated to approximately 19 feet below ground surface (bgs). A subsequent borehole drilled in the excavation to approximately 115 feet bgs identified groundwater at approximately 97 feet bgs, specifically concentrations of benzene, toluene, ethylbenzene, and total xylenes (BTEX) exceeding New Mexico Water Quality Control Commission (NMWQCC) standards. As a result, five groundwater monitoring wells (MW-1 through MW-5) were installed.

Groundwater elevations and groundwater quality were monitored, with monitoring wells MW-2, MW-3, and MW-5 containing PSH at least once since installation. Historical records documenting monitoring activities and results can be found in previous annual reports submitted to the New Mexico Oil Conservation Division (NMOCD).

In October 2019, WSP conducted drilling activities which included the installation of two new monitoring wells, MW-6 and MW-7, located downgradient of monitoring wells MW-3 and MW-5, for use as point of compliance (POC) monitoring wells. On December 17, 2019, United Field Services in Farmington, New Mexico was contracted to survey top-of-casing elevations in order to accurately determine groundwater elevations. All monitoring well locations are depicted on Figure 2.

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METHODOLOGY

Groundwater monitoring activities were conducted at the Site from January through December 2020. WSP conducted biweekly to monthly site visits to monitor groundwater elevations in all monitoring wells and collected groundwater samples from monitoring wells MW-2, MW-5, MW-6, and MW-7 in June 2020.

GROUNDWATER AND PSH ELEVATIONS

Groundwater levels were monitored quarterly by recording depth to groundwater and depth to PSH measurements in the existing monitoring wells with an oil/water interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with distilled water prior to each measurement. Top-of-casing elevations from the survey were used to calculate groundwater potentiometric elevations, draft groundwater contours, and determine groundwater flow direction.

GROUNDWATER SAMPLING

On June 23, 2020, monitoring wells MW-2, MW-5, MW-6, and MW-7 were purged using disposable polyvinyl chloride (PVC) bailers. As groundwater was purged from each monitoring well, pH, electrical conductance (EC), temperature, oxidation-reduction potential (ORP), and dissolved oxygen (DO) were recorded for determining stabilization conditions prior to sampling. Monitoring wells were purged until a total of three casing volumes were removed or the well was purged dry, indicating that groundwater would be representative of aquifer conditions. Purged groundwater was containerized and disposed of at a nearby Harvest compressor station.

Groundwater samples were collected by filling three 40-milliliter (mL) glass vials from each well. The laboratory-supplied vials were filled and capped with zero headspace to prevent degradation of the sample. Samples were labeled with the date and time of collection, well designation, project name, sample collector's name, and parameters to be analyzed. They were immediately sealed, packed on ice, and submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021. Proper chain-of-custody (COC) procedures were followed documenting the date and time sampled, sample number, type of sample, sample collector's name, preservative used, analyses required, and sample collector's signature.

Monitoring wells MW-1 and MW-4 were not sampled in 2020. Monitoring well MW-3 was also not sampled due to the presence of PSH. The following NMWQCC standards apply to groundwater: 5 micrograms/L (µg/L) benzene, 1,000 µg/L toluene, 700 µg/L ethylbenzene, and 620 µg/L total xylenes.

PSH RECOVERY

In November 2019, WSP installed a solar powered pneumatic pumping recovery system in monitoring MW-3. The pump utilizes a hydrophobic and oleophilic skimmer that floats on the water column to remove PSH from the water PSH interface. The system cycles between vacuum and pressure to move PSH to the surface, where it is containerized. A delay between pumping cycles allows for recharge of fluids in the monitoring well and prevents over-pumping to efficiently use the power generated from the solar panels. Bi-weekly to monthly site visits were conducted in 2020 to monitor system performance, PSH recovery, and conduct system operations and maintenance (O&M). The PSH recovery system is being rotated quarterly to multiple sites in the vicinity. It is anticipated that the system will operate at each site (including this Site) for approximately six months per year.

Operational data and system maintenance data are summarized in Table 3.

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RESULTS

Depth to groundwater information and analytical results are provided in Tables 1 and 2, respectively. Analytical laboratory reports for the analyzed samples are attached as Enclosure A.

Depth to groundwater was collected on March 19, 2020, June 23, 2020, September 8, 2020, and December 4, 2020. Depth to groundwater data collected on June 23, 2020, during the annual groundwater sampling event, indicated that groundwater was present at elevations between 6,146.22 feet (MW-7) and 6,150.78 feet (MW-1) above mean sea level (amsl). Based on data collected during the four quarterly events, the interpreted groundwater-flow direction is to the southeast (contours shown on Figures 3A through 3D). Contours were inferred based on groundwater elevations and physical characteristics at the Site (topography, proximity to irrigation ditches, etc.). PSH levels in MW-3 measured in 2020 ranged from a thickness of 0.05 feet in September 2020 to 1.18 feet in December 2020. PSH thickness and approximate plume extent are depicted on Figures 3A through 3D. Depth to groundwater and depth to PSH information is presented in Table 1.

The on-site wells, except for MW-1, MW-3, and MW-4, were sampled on June 23, 2020. BTEX constituents were detected in monitoring wells MW-2, and MW-5. Groundwater from wells MW-2 and MW-5 contained benzene concentrations of 8,200 µg/L and 360 µg/L, respectively, which exceed the NMWQCC standard of 5 µg/L. Monitoring wells MW-6 and MW-7 did not contain detectable concentrations of BTEX compounds and were all compliant with the NMWQCC standards. BTEX results and approximate plume extent are presented on Figure 3 and summarized in Table 2.

Approximately 22.3 gallons of PSH have been recovered from monitoring well MW-3 through pneumatic pumping since PSH recovery installation on November 18, 2019, through December 30, 2020. A total of 19.6 gallons of PSH were recovered in 2020. At the time of the installation of the PSH recovery system in November 2019, the PSH thickness was 1.93 feet; in 2020, the PSH thickness ranged from 0.03 feet on August 6, 2020 to 1.53 feet on January 9, 2020.

CONCLUSION

Based on the results of the 2020 sampling and monitoring activities, groundwater at the Site has been successfully delineated downgradient of impacted groundwater and PSH, red plume on Figure 3, with POC monitoring wells MW-6 and MW-7 in compliance with NMWQCC standards for BTEX in groundwater and the absence of PSH in each well. In addition, groundwater data collected during this year, as well as historical groundwater data, indicate contaminant concentrations have declined over time except in monitoring wells MW-2, and MW-5. Despite the decline in contaminant concentrations in most wells, PSH thickness remains stable in well MW-3.

To address residual PSH at the Site, WSP installed a mechanical PSH pumping system in monitoring well MW-3 in November 2019. Approximately 22.3 gallons of PSH have been recovered from monitoring well MW-3 through pneumatic pumping since PSH recovery installation on November 18, 2019. PSH recovery system is being rotated quarterly to multiple sites in the vicinity. It is anticipated that the system will operate at each site (including this Site) for approximately six months per year.

With the installation of the PSH recovery system, WSP recommends monthly site visits for O&M purposes. Additional O&M visits may be necessary depending on product recovery rates and system maintenance requirements. In addition, WSP recommends groundwater monitoring through quarterly well gauging (depth-to-groundwater and depth-to-PSH measurements) and annual groundwater sampling for laboratory analysis of BTEX compounds.

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Kind regards,

A handwritten signature in black ink that reads "Eric Carroll".

Eric Carroll
Associate Geologist

A handwritten signature in black ink that reads "Ashley L. Ager".

Ashley Ager, PG
Managing Director

cc:
Encl.

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Figure 1: Site Location Map

Figure 2: Site Map

Figure 3A: Groundwater Elevations and Analytical Results (March 2020)

Figure 3B: Groundwater Elevations and Analytical Results (June 2020)

Figure 3C: Groundwater Elevations and Analytical Results (September 2020)

Figure 3D: Groundwater Elevations and Analytical Results (December 2020)

Table 1: Groundwater Elevation Summary

Table 2: Groundwater Laboratory Analytical Results

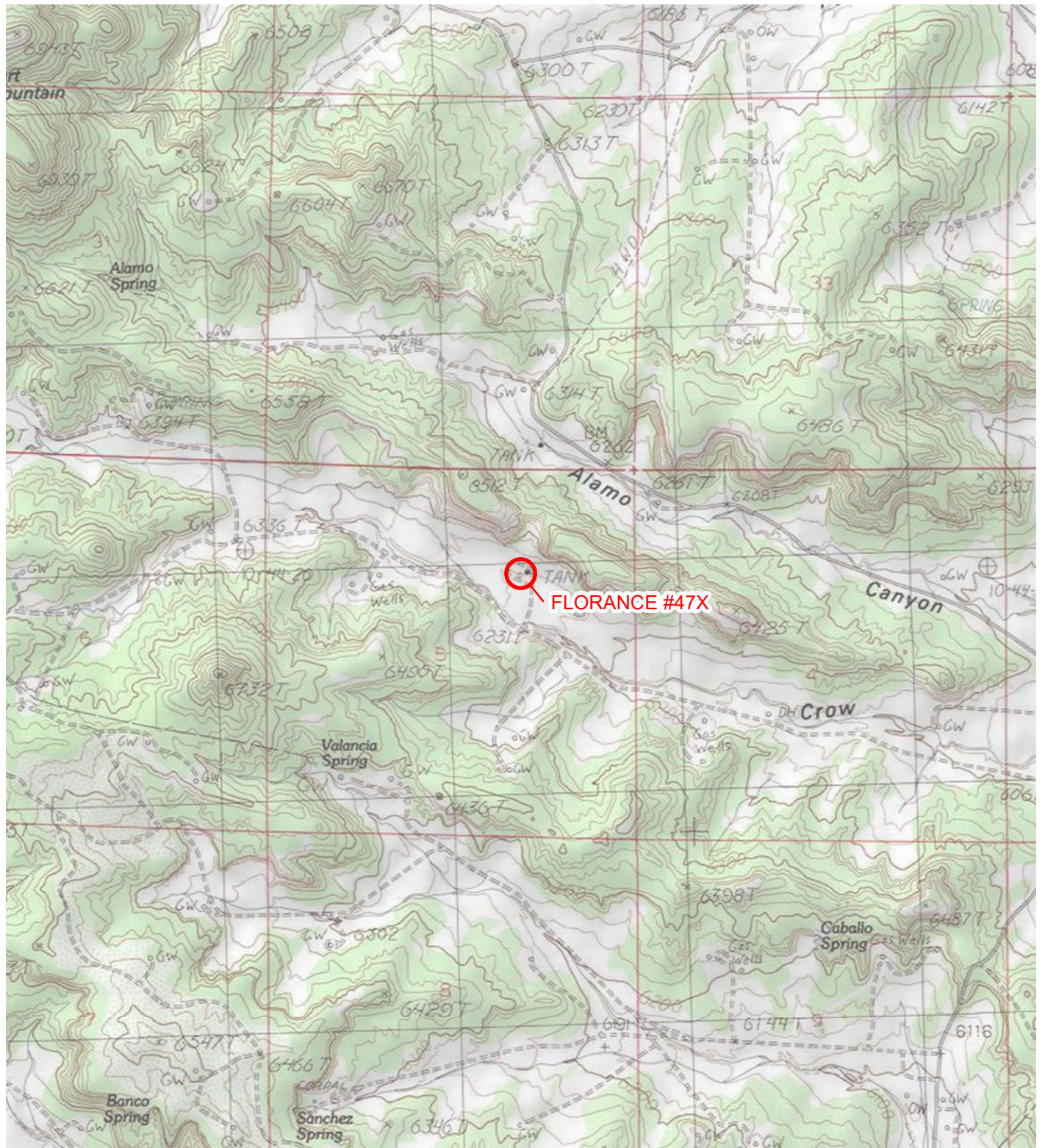
Table 3: Pneumatic Product Recovery System Data

Enclosure A: Laboratory Analytical Results

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FIGURES

**LEGEND**

○ SITE LOCATION

IMAGE COURTESY OF ESRI/USGS

0 2,000 4,000
Feet



FIGURE 1
SITE LOCATION MAP
FLORANCE #47X
SWNE SEC 5 T30N R9W
SAN JUAN COUNTY, NEW MEXICO
HARVEST FOUR CORNERS, LLC.



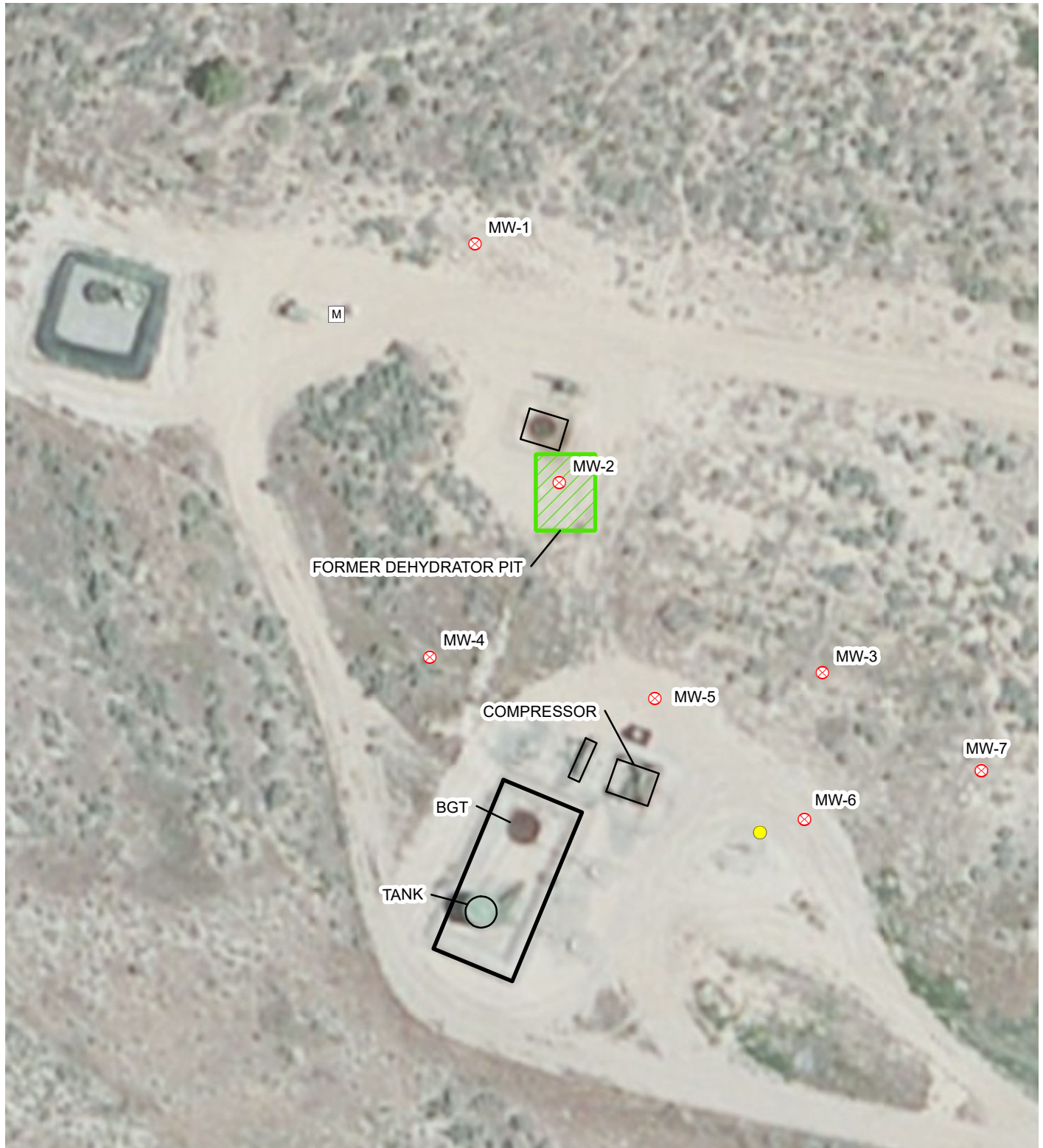


IMAGE COURTESY OF ESRI

LEGEND

⊗ MONITORING WELL

● WELLHEAD

[M] METER HOUSE

▭ BERM

BGT: BELOW GRADE TANK

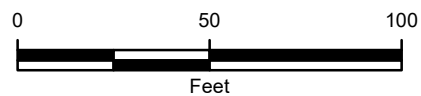
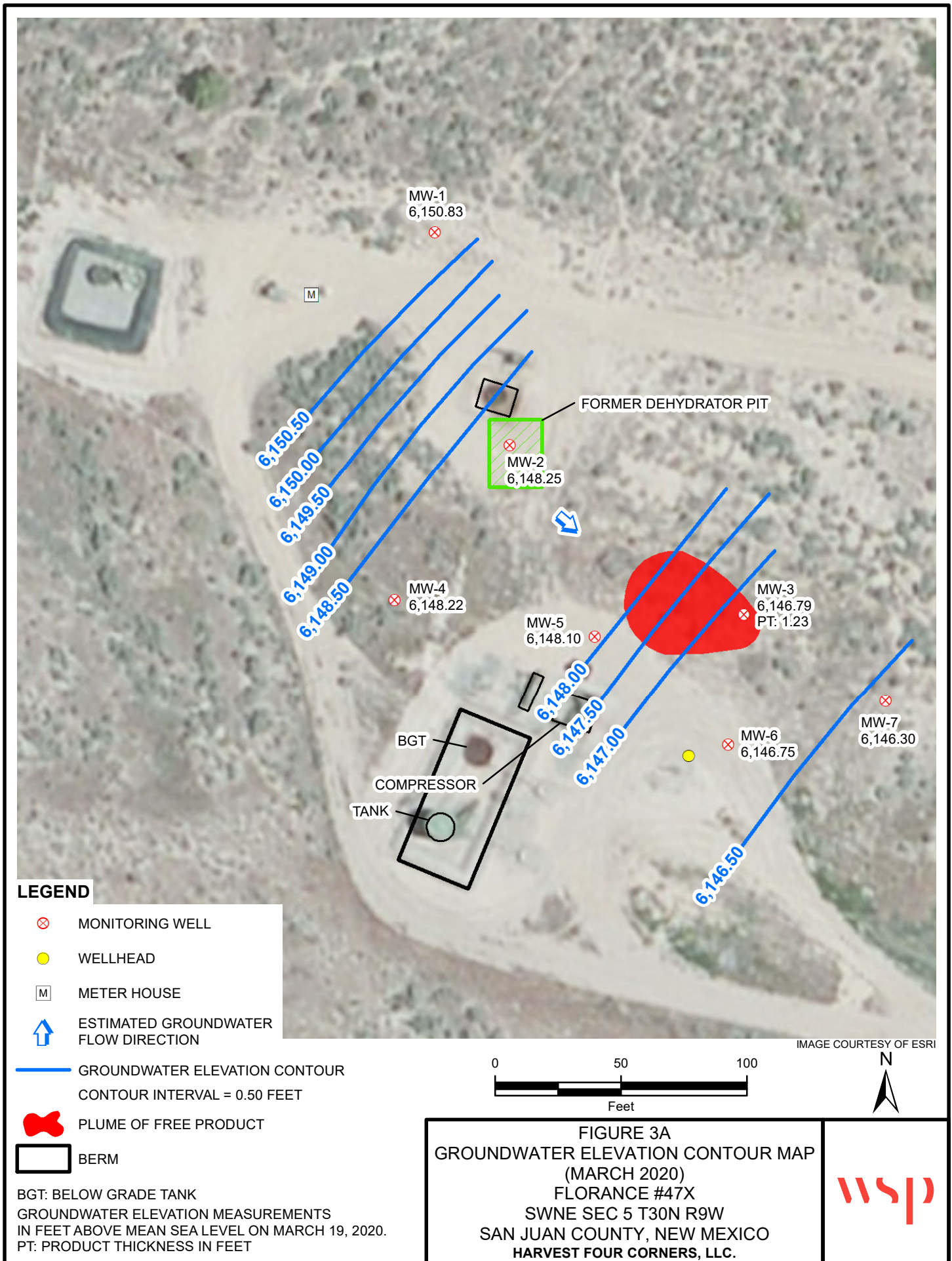
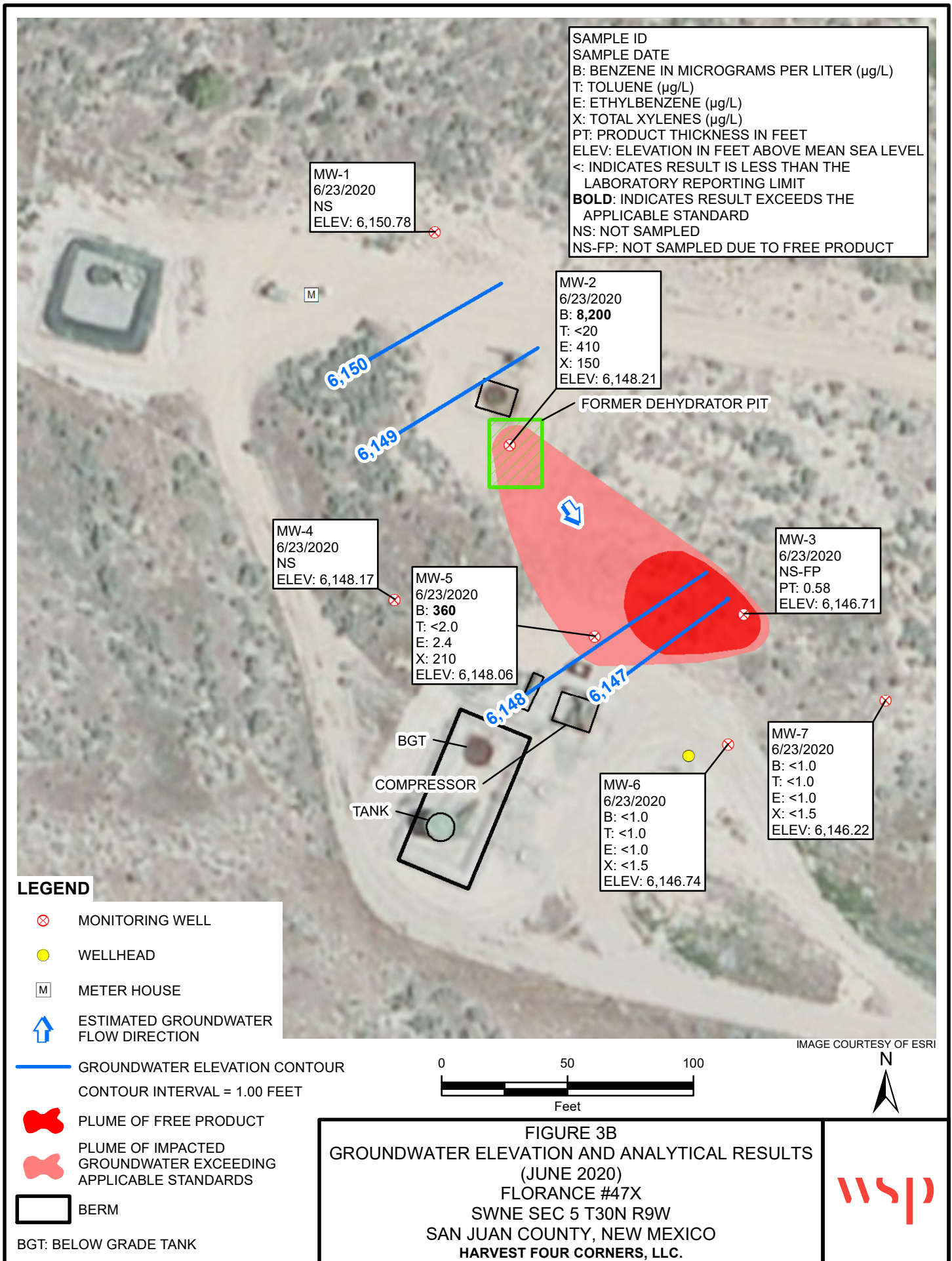


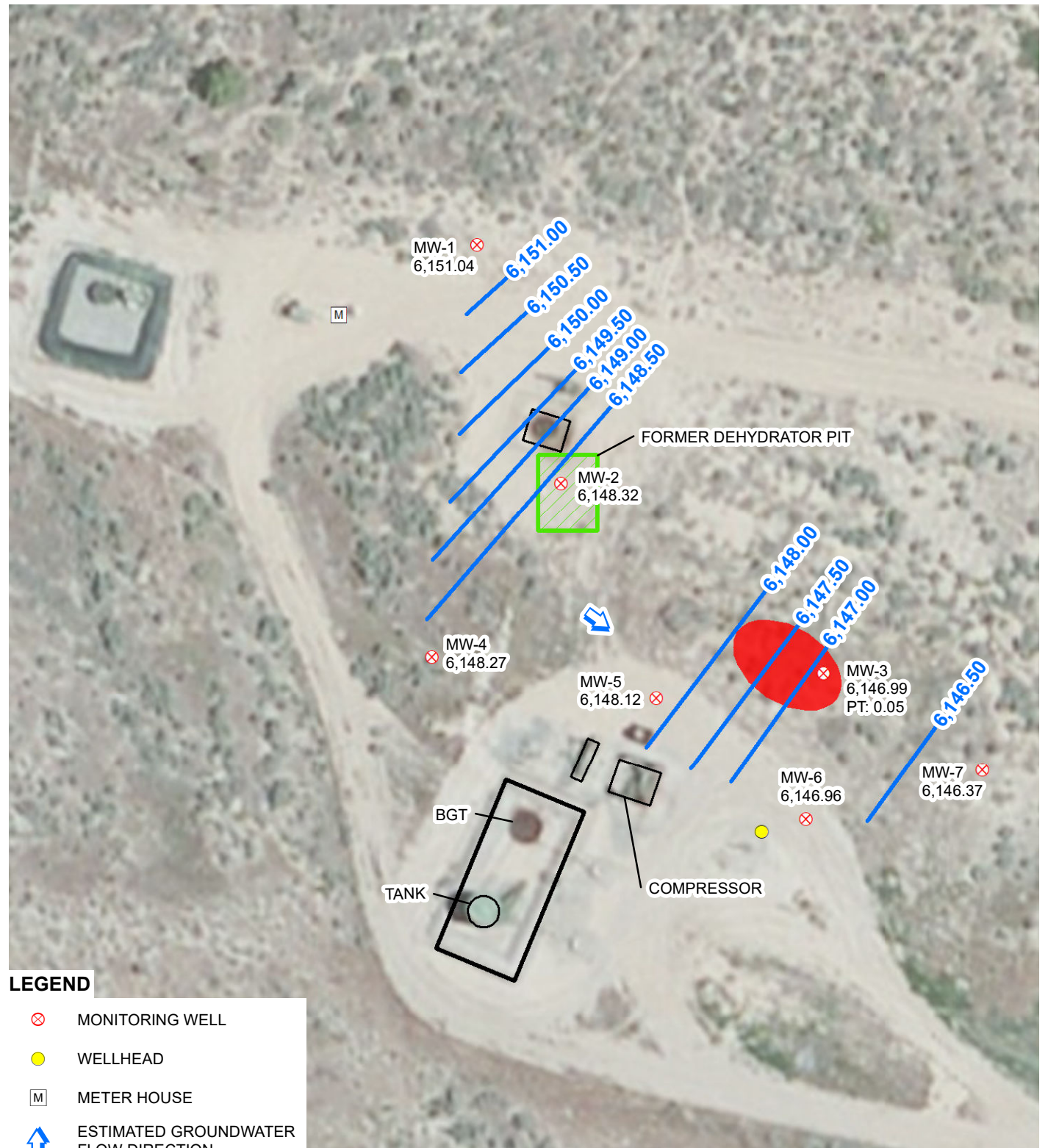
FIGURE 2
SITE MAP
FLORANCE #47X
SWNE SEC 5 T30N R9W
SAN JUAN COUNTY, NEW MEXICO
HARVEST FOUR CORNERS, LLC.

wsp



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**LEGEND**

- ⊗ MONITORING WELL
- WELLHEAD
- M METER HOUSE
- ↑ ESTIMATED GROUNDWATER FLOW DIRECTION

— GROUNDWATER ELEVATION CONTOUR
CONTOUR INTERVAL = 0.50 FEET

▭ BERM

● PLUME OF FREE PRODUCT

BGT: BELOW GRADE TANK
GROUNDWATER ELEVATION MEASUREMENTS
IN FEET ABOVE MEAN SEA LEVEL ON SEPTEMBER 8, 2020.
PT: PRODUCT THICKNESS IN FEET

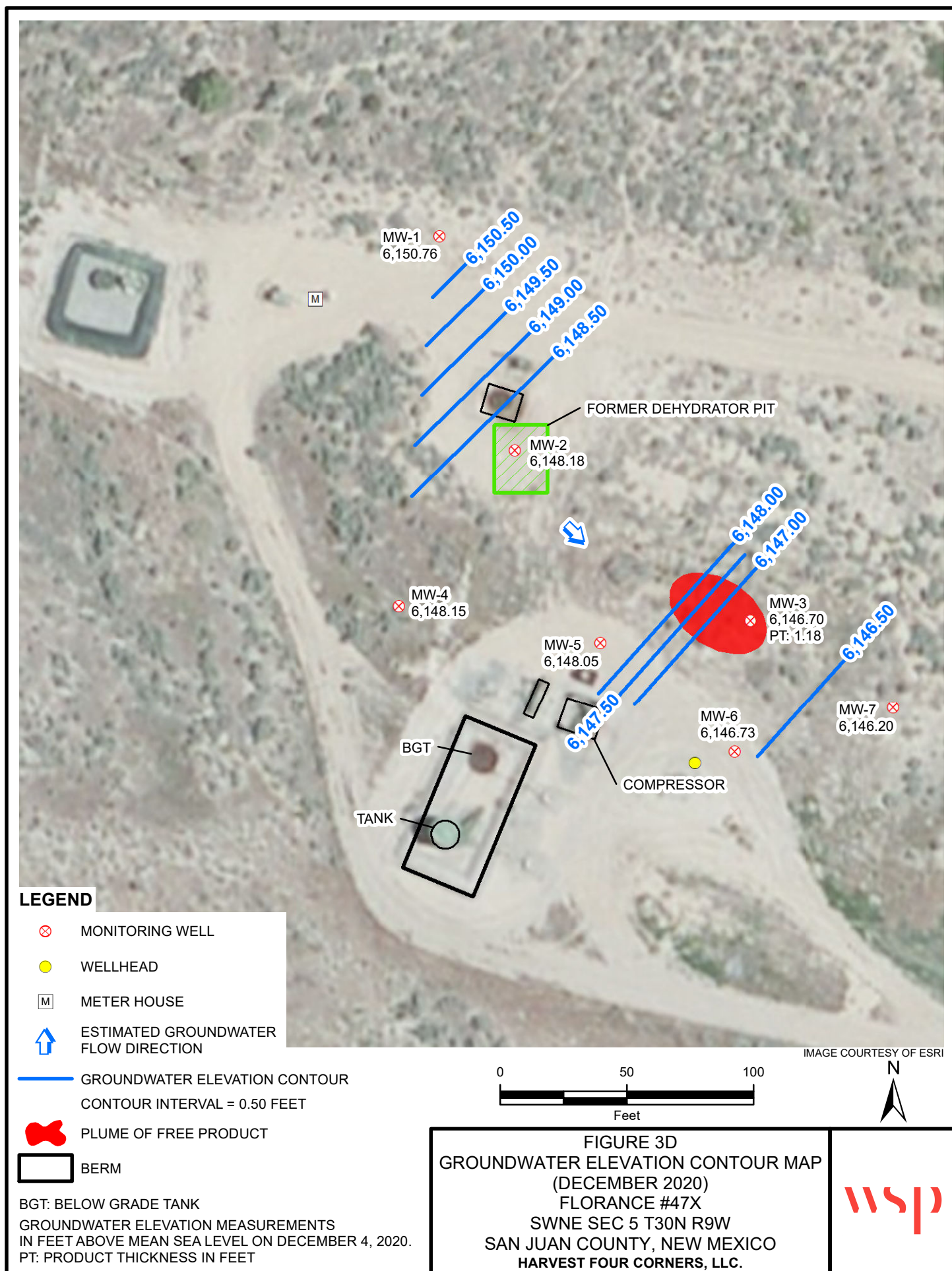
0 50 100
Feet

IMAGE COURTESY OF ESRI



FIGURE 3C
GROUNDWATER ELEVATION CONTOUR MAP
(SEPTEMBER 2020)
FLORANCE #47X
SWNE SEC 5 T30N R9W
SAN JUAN COUNTY, NEW MEXICO
HARVEST FOUR CORNERS, LLC.

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TABLES

TABLE 1
GROUNDWATER ELEVATIONS SUMMARY
FLORANCE #47X
SAN JUAN COUNTY, NEW MEXICO

Well Name	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-1	4/2/2012	6,229.61	UNK	UNK	UNK	UNK
MW-1	6/13/2012	6,229.61	UNK	UNK	UNK	UNK
MW-1	10/2/2012	6,229.61	UNK	UNK	UNK	UNK
MW-1	12/6/2012	6,229.61	UNK	UNK	UNK	UNK
MW-1	3/1/2013	6,229.61	99.52	NP	NP	6,130.09
MW-1*	6/24/2013	6,250.21	99.41	NP	NP	6,150.80
MW-1	9/12/2013	6,250.21	98.90	NP	NP	6,151.31
MW-1	12/4/2013	6,250.21	98.79	NP	NP	6,151.42
MW-1	3/19/2014	6,250.21	99.08	NP	NP	6,151.13
MW-1	6/13/2014	6,250.21	99.02	NP	NP	6,151.19
MW-1	9/11/2014	6,250.21	99.01	NP	NP	6,151.20
MW-1	12/4/2014	6,250.21	99.18	NP	NP	6,151.03
MW-1	3/17/2015	6,250.21	99.14	NP	NP	6,151.07
MW-1	4/28/2016	6,250.21	99.17	NP	NP	6,151.04
MW-1	8/11/2016	6,250.21	99.28	NP	NP	6,150.93
MW-1	10/17/2016	6,250.21	99.20	NP	NP	6,151.01
MW-1	1/31/2017	6,250.21	99.24	NP	NP	6,150.97
MW-1	4/28/2017	6,250.21	99.24	NP	NP	6,150.97
MW-1	7/28/2017	6,250.21	99.31	NP	NP	6,150.90
MW-1**	10/7/2019	6,250.35	99.54	NP	NP	6,150.81
MW-1	3/19/2020	6,250.35	99.52	NP	NP	6,150.83
MW-1	6/23/2020	6,250.35	99.57	NP	NP	6,150.78
MW-1	9/8/2020	6,250.35	99.31	NP	NP	6,151.04
MW-1	12/4/2020	6,250.35	99.59	NP	NP	6,150.76
MW-1	3/31/2021	6,250.35	99.81	NP	NP	6,150.54
MW-1	5/24/2021	6,250.35	99.61	NP	NP	6,150.74
MW-1	8/23/2021	6,250.35	100.09	NP	NP	6,150.26
MW-2	4/2/2012	6,226.30	UNK	UNK	UNK	UNK
MW-2	6/13/2012	6,226.30	UNK	UNK	UNK	UNK
MW-2	10/2/2012	6,226.30	UNK	UNK	UNK	UNK
MW-2	12/6/2012	6,226.30	UNK	UNK	UNK	UNK
MW-2	3/1/2013	6,226.30	98.47	NP	NP	6,127.83
MW-2*	6/24/2013	6,247.15	98.45	NP	NP	6,148.70
MW-2	9/12/2013	6,247.15	98.60	NP	NP	6,148.55
MW-2	12/4/2013	6,247.15	98.41	NP	NP	6,148.74
MW-2	3/19/2014	6,247.15	98.54	NP	NP	6,148.61
MW-2	6/13/2014	6,247.15	98.53	NP	NP	6,148.62
MW-2	9/11/2014	6,247.15	98.60	NP	NP	6,148.55
MW-2	12/4/2014	6,247.15	98.56	NP	NP	6,148.59
MW-2	3/17/2015	6,247.15	98.63	NP	NP	6,148.52
MW-2	4/28/2016	6,247.15	98.73	NP	NP	6,148.42
MW-2	8/11/2016	6,247.15	98.76	NP	NP	6,148.39
MW-2	10/17/2016	6,247.15	98.73	NP	NP	6,148.42
MW-2	1/31/2017	6,247.15	98.77	NP	NP	6,148.38
MW-2	4/28/2017	6,247.15	98.76	NP	NP	6,148.39
MW-2	7/28/2017	6,247.15	98.82	NP	NP	6,148.33
MW-2**	10/7/2019	6,247.28	99.03	NP	NP	6,148.25
MW-2	3/19/2020	6,247.28	99.03	NP	NP	6,148.25
MW-2	6/23/2020	6,247.28	99.07	NP	NP	6,148.21

TABLE 1
GROUNDWATER ELEVATIONS SUMMARY
FLORANCE #47X
SAN JUAN COUNTY, NEW MEXICO

Well Name	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-2	9/8/2020	6,247.28	98.96	NP	NP	6,148.32
MW-2	12/4/2020	6,247.28	99.10	NP	NP	6,148.18
MW-2	3/31/2021	6,247.28	99.22	NP	NP	6,148.06
MW-2	5/24/2021	6,247.28	99.14	NP	NP	6,148.14
MW-2	8/23/2021	6,247.28	99.11	NP	NP	6,148.17
MW-3	4/2/2012	6,217.53	UNK	UNK	UNK	UNK
MW-3	6/13/2012	6,217.53	UNK	UNK	UNK	UNK
MW-3	10/2/2012	6,217.53	UNK	UNK	UNK	UNK
MW-3	12/6/2012	6,217.53	UNK	UNK	UNK	UNK
MW-3	3/1/2013	6,217.53	92.48	91.51	0.97	6,125.83
MW-3*	6/24/2013	6,238.51	91.71	90.86	0.85	6,147.48
MW-3	9/12/2013	6,238.51	91.69	90.89	0.80	6,147.46
MW-3	12/4/2013	6,238.51	91.23	90.83	0.40	6,147.60
MW-3	3/19/2014	6,238.51	91.59	91.03	0.56	6,147.37
MW-3	6/13/2014	6,238.51	91.38	91.08	0.30	6,147.37
MW-3	9/11/2014	6,238.51	91.47	91.20	0.27	6,147.26
MW-3	12/4/2014	6,238.51	91.15	91.15†	<0.01	6,147.36
MW-3	3/17/2015	6,238.51	91.53	91.22	0.31	6,147.23
MW-3	4/28/2016	6,238.51	92.00	91.20	0.80	6,147.15
MW-3	8/11/2016	6,238.51	92.54	91.18	1.36	6,147.06
MW-3	10/17/2016	6,238.51	92.54	91.56	0.98	6,146.75
MW-3	1/31/2017	6,238.51	92.59	91.09	1.50	6,147.12
MW-3	4/28/2017	6,238.51	92.10	91.21	0.89	6,147.12
MW-3	7/28/2017	6,238.51	92.28	91.26	1.02	6,147.05
MW-3**	10/7/2019	6,238.66	93.46	91.31	2.15	6,146.92
MW-3	3/19/2020	6,238.66	92.85	91.62	1.23	6,146.79
MW-3	6/23/2020	6,238.66	92.41	91.83	0.58	6,146.71
MW-3	9/8/2020	6,238.66	91.71	91.66	0.05	6,146.99
MW-3	12/4/2020	6,238.66	92.90	91.72	1.18	6,146.70
MW-3	3/31/2021	6,238.66	92.60	92.08	0.52	6,146.48
MW-3	5/24/2021	6,238.66	92.91	91.68	1.23	6,146.73
MW-3	8/23/2021	6,238.66	93.62	91.59	2.03	6,146.66
MW-4	4/2/2012	6,219.93	UNK	UNK	UNK	UNK
MW-4	6/13/2012	6,219.93	UNK	UNK	UNK	UNK
MW-4	10/2/2012	6,219.93	UNK	UNK	UNK	UNK
MW-4	12/6/2012	6,219.93	UNK	UNK	UNK	UNK
MW-4	3/1/2013	6,219.93	92.02	NP	NP	6,127.91
MW-4*	6/24/2013	6,240.67	91.98	NP	NP	6,148.69
MW-4	9/12/2013	6,240.67	92.00	NP	NP	6,148.67
MW-4	12/4/2013	6,240.67	91.96	NP	NP	6,148.71
MW-4	3/19/2014	6,240.67	92.09	NP	NP	6,148.58
MW-4	6/13/2014	6,240.67	92.06	NP	NP	6,148.61
MW-4	9/11/2014	6,240.67	92.13	NP	NP	6,148.54
MW-4	12/4/2014	6,240.67	92.10	NP	NP	6,148.57
MW-4	3/17/2015	6,240.67	92.17	NP	NP	6,148.50
MW-4	4/28/2016	6,240.67	92.25	NP	NP	6,148.42
MW-4	8/11/2016	6,240.67	92.32	NP	NP	6,148.35

TABLE 1
GROUNDWATER ELEVATIONS SUMMARY
FLORANCE #47X
SAN JUAN COUNTY, NEW MEXICO

Well Name	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-4	10/17/2016	6,240.67	92.29	NP	NP	6,148.38
MW-4	1/31/2017	6,240.67	92.31	NP	NP	6,148.36
MW-4	4/28/2017	6,240.67	92.31	NP	NP	6,148.36
MW-4	7/28/2017	6,240.67	92.36	NP	NP	6,148.31
MW-4**	10/7/2019	6,240.80	92.60	NP	NP	6148.20
MW-4	3/19/2020	6,240.80	92.58	NP	NP	6148.22
MW-4	6/23/2020	6,240.80	92.63	NP	NP	6148.17
MW-4	9/8/2020	6,240.80	92.53	NP	NP	6148.27
MW-4	12/4/2020	6,240.80	92.65	NP	NP	6148.15
MW-4	3/31/2021	6,240.80	92.86	NP	NP	6147.94
MW-4	5/24/2021	6,240.80	92.66	NP	NP	6148.14
MW-4	8/23/2021	6,240.80	92.67	NP	NP	6148.13
MW-5	4/2/2012	6,216.97	UNK	UNK	UNK	UNK
MW-5	6/13/2012	6,216.97	UNK	UNK	UNK	UNK
MW-5	10/2/2012	6,216.97	UNK	UNK	UNK	UNK
MW-5	12/6/2012	6,216.97	UNK	UNK	UNK	UNK
MW-5	3/1/2013	6,216.97	90.48	90.46	0.02	6,126.51
MW-5*	6/24/2013	6,238.33	89.78	NP	NP	6,148.55
MW-5	9/12/2013	6,238.33	89.98	NP	NP	6,148.35
MW-5	12/4/2013	6,238.33	89.86	NP	NP	6,148.47
MW-5	3/19/2014	6,238.33	89.91	NP	NP	6,148.42
MW-5	6/13/2014	6,238.33	89.95	NP	NP	6,148.38
MW-5	9/11/2014	6,238.33	90.02	NP	NP	6,148.31
MW-5	12/4/2014	6,238.33	90.02	NP	NP	6,148.31
MW-5	3/17/2015	6,238.33	89.98	NP	NP	6,148.35
MW-5	4/28/2016	6,238.33	90.11	NP	NP	6,148.22
MW-5	8/11/2016	6,238.33	90.20	NP	NP	6,148.13
MW-5	10/17/2016	6,238.33	90.18	NP	NP	6,148.15
MW-5	1/31/2017	6,238.33	90.11	NP	NP	6,148.22
MW-5	4/28/2017	6,238.33	90.13	NP	NP	6,148.20
MW-5	7/28/2017	6,238.33	90.17	90.16	0.01	6,148.16
MW-5**	10/14/2019	6,236.47	88.3	NP	NP	6,148.17
MW-5	3/19/2020	6,236.47	88.37	NP	NP	6,148.10
MW-5	6/23/2020	6,236.47	88.41	NP	NP	6,148.06
MW-5	9/8/2020	6,236.47	88.35	NP	NP	6,148.12
MW-5	12/4/2020	6,236.47	88.42	NP	NP	6,148.05
MW-5	3/31/2021	6,236.47	88.55	NP	NP	6,147.92
MW-5	5/24/2021	6,236.47	88.43	NP	NP	6,148.04
MW-5	8/23/2021	6,236.47	88.46	NP	NP	6,148.01
MW-6**	10/14/2019	6,235.26	88.42	NP	NP	6,146.84
MW-6	3/19/2020	6,235.26	88.51	NP	NP	6,146.75
MW-6	6/23/2020	6,235.26	88.52	NP	NP	6,146.74
MW-6	9/8/2020	6,235.26	88.30	NP	NP	6,146.96
MW-6	12/4/2020	6,235.26	88.53	NP	NP	6,146.73
MW-6	3/31/2021	6,235.26	88.74	NP	NP	6,146.52
MW-6	5/24/2021	6,235.26	88.60	NP	NP	6,146.66
MW-6	8/23/2021	6,235.26	88.58	NP	NP	6,146.68

TABLE 1

GROUNDWATER ELEVATIONS SUMMARY
FLORANCE #47X
SAN JUAN COUNTY, NEW MEXICO

Well Name	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-7**	10/14/2019	6,237.28	90.94	NP	NP	6,146.34
MW-7	3/19/2020	6,237.28	90.98	NP	NP	6,146.30
MW-7	6/23/2020	6,237.28	91.06	NP	NP	6,146.22
MW-7	9/8/2020	6,237.28	90.91	NP	NP	6,146.37
MW-7	12/4/2020	6,237.28	91.08	NP	NP	6,146.20
MW-7	3/31/2021	6,237.28	91.22	NP	NP	6,146.06
MW-7	5/24/2021	6,237.28	91.13	NP	NP	6,146.15
MW-7	8/23/2021	6,237.28	91.1	NP	NP	6,146.18

Notes:

< - less than

* - Top of casing elevation was resurveyed on 6/20/13

** - Top of casing elevation was resurveyed on 12/17/2019

† - Oil-water interface probe did not detect phase separated hydrocarbons. LTE visually observed phase separated hydrocarbons using a bailer.

Groundwater elevation calculation in wells with product: (Top of Casing Elevation - Depth to Water) + (Product Thickness * 0.8)

AMSL - above mean sea level

BTOC - below top of casing

NP - no free phase hydrocarbons are present the well

UNK - data is not known

TABLE 2

**GROUNDWATER LABORATORY ANALYTICAL RESULTS
FLORACE #47X
SAN JUAN COUNTY, NEW MEXICO**

Well Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standard (µg/L)		5	1000	700	620
MW-1	1/8/1997	3,380	7,150	917	7,200
MW-1	7/13/1997	367	241	35	191
MW-1	10/1/1997	171	54	27	65
MW-1	1/6/1998	147	70	20	73.6
MW-1	3/9/1998	140	1.4	17	36
MW-1	6/11/1998	94	19	11	16.3
MW-1	8/12/1998	49	4.7	8.8	5.7
MW-1	12/15/1998	46	11	5.8	4.7
MW-1	2/9/1999	33	6.6	5.6	4.7
MW-1	4/21/1999	40	15	6.4	10.4
MW-1	7/28/1999	34	7.8	3	3.0
MW-1	11/3/1993	2.9	<0.5	<0.5	<1.5
MW-1	3/23/2000	10	1.1	<0.5	<1.5
MW-1	6/14/2000	4.1	1.4	0.6	<1.5
MW-1	11/17/2000	4.64	<1.0	<1.0	<1.0
MW-1	1/31/2001	3.67	1.44	<1.0	<1.0
MW-1	4/30/2001	5.44	1.90	<1.0	1.78
MW-1	10/10/2001	1.1	<2.0	<2.0	<2.0
MW-1	12/2/2003	<2.0	<2.0	<2.0	<5.0
MW-1	9/20/2004	3.4	<2.0	<2.0	<5.0
MW-1	12/3/2004	<2.0	<2.0	<2.0	<5.0
MW-1	3/10/2005	<2.0	<2.0	<2.0	<5.0
MW-1	6/18/2005	<2.0	<2.0	<2.0	<5.0
MW-1	7/13/2006	2.2	<1.0	<1.0	<3.0
MW-1	9/21/2006	4.9	<1.0	<1.0	<3.0
MW-1	3/29/2010	<1.0	<1.0	<1.0	<3.0
MW-1	6/18/2010	<1.0	<1.0	<1.0	<3.0
MW-1	9/10/2010	1.2	<1.0	<1.0	<3.0
MW-1	12/4/2010	<1.0	<1.0	<1.0	<3.0
MW-1	3/2/2011	<1.0	<1.0	<1.0	<3.0
MW-1	6/14/2011	3.6	<1.0	<1.0	<3.0
MW-1	9/12/2011	<1.0	<1.0	<1.0	<3.0
MW-1	1/3/2012	<1.0	<1.0	<1.0	<3.0
MW-1	4/2/2012	<1.0	<1.0	<1.0	<3.0
MW-1	6/13/2012	<1.0	<1.0	<1.0	<3.0
MW-1	10/2/2012	1.1	<1.0	<1.0	<3.0
MW-1	12/6/2012	<1.0	<1.0	<1.0	<3.0
MW-1	3/1/2013	<1.0	<1.0	<1.0	<2.0
MW-1	11/1/2019	1.4	<1.0	<1.0	<1.5
MW-1	6/23/2020	NS	NS	NS	NS
MW-1	5/24/2021	NS	NS	NS	NS
MW-2	8/12/1998	9,800	14,000	920	9,200
MW-2	12/15/1998	12,000	17,000	870	8,700
MW-2	2/9/1999	11,000	16,000	720	7,300
MW-2	4/21/1999	14,000	20,000	850	8,500
MW-2	7/28/1999	11,000	15,000	740	6,800
MW-2	11/3/1999	11,000	14,000	770	8,100
MW-2	3/23/2000	12,000	15,000	810	8,200

TABLE 2

**GROUNDWATER LABORATORY ANALYTICAL RESULTS
FLORACE #47X
SAN JUAN COUNTY, NEW MEXICO**

Well Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standard (µg/L)		5	1000	700	620
MW-2	6/14/2000	6,400	7,000	570	5,800
MW-2	11/17/2000	5,980	3,240	600	4,780
MW-2	1/31/2001	6,300	2,790	458	5,490
MW-2	4/30/2001	7,160	2,200	404	7,060
MW-2	10/10/2001	4,500	1,000	390	3,800
MW-2	12/2/2003	11,000	<100	540	6,400
MW-2	9/20/2004	11,000	<200	600	5,800
MW-2	12/3/2004	11,000	<200	630	6,300
MW-2	3/10/2005	10,000	38	490	5,700
MW-2	6/18/2005	9,700	<100	640	6,000
MW-2	9/16/2005	8,900	31	370	4,800
MW-2	11/30/2005	<2.0	2.9	<2.0	12.2
MW-2	7/18/2006	16,900	<10.0	753	4,370
MW-2	3/29/2010	9,460	67	521	6,210
MW-2	6/18/2010	3,270	<1.0	260	3,530
MW-2	12/4/2010	1,470	26.3	599	2,720
MW-2	3/2/2011	2,530	1.4	764	3,700
MW-2	6/14/2011	8,500	<20.0	537	4,490
MW-2	1/3/2012	9,400	<50.0	710	6,340
MW-2	4/2/2012	10,000	710	<100	6,390
MW-2	6/13/2012	11,200	716	<50.0	6,790
MW-2	10/2/2012	10,200	765	<100	7,260
MW-2	12/6/2012	8,280	722	<50.0	5,610
MW-2	3/4/2013	8,600	<10	<10	6,500
MW-2	6/24/2013	6,300	<10	600	5,800
MW-2	9/12/2013	NSO	NSO	NSO	NSO
MW-2	12/4/2013	39	72	<5.0	150
MW-2	3/19/2014	9,700	<10	760	7,000
MW-2	6/13/2014	8,600	<10	290	5,800
MW-2	9/11/2014	9,700	<10	490	7,200
MW-2	12/8/2014	9,400	<10	360	6,900
MW-2	3/17/2015	5,000	<20	340	3,000
MW-2	4/28/2017	5,100	<5	410	3,600
MW-2	11/1/2019	4,600	<1.0	270	190
MW-2	6/23/2020	8,200	<20	410	150
MW-2	5/24/2021	28	<1.0	5.1	6.7
MW-3	4/2/2012	NS	NS	NS	NS
MW-3	6/13/2012	NS	NS	NS	NS
MW-3	10/2/2012	NS	NS	NS	NS
MW-3	12/6/2012	NS	NS	NS	NS
MW-3	3/1/2013	NS-FP	NS-FP	NS-FP	NS-FP
MW-3	6/24/2013	NS-FP	NS-FP	NS-FP	NS-FP
MW-3	9/12/2013	NS-FP	NS-FP	NS-FP	NS-FP
MW-3	12/4/2013	NS-FP	NS-FP	NS-FP	NS-FP
MW-3	3/19/2014	NS-FP	NS-FP	NS-FP	NS-FP
MW-3	6/13/2014	NS-FP	NS-FP	NS-FP	NS-FP
MW-3	9/11/2014	NS-FP	NS-FP	NS-FP	NS-FP
MW-3	12/4/2014	NS-FP	NS-FP	NS-FP	NS-FP

TABLE 2

**GROUNDWATER LABORATORY ANALYTICAL RESULTS
FLORACE #47X
SAN JUAN COUNTY, NEW MEXICO**

Well Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standard (µg/L)		5	1000	700	620
MW-3	3/17/2015	NS-FP	NS-FP	NS-FP	NS-FP
MW-3	11/1/2019	NS-FP	NS-FP	NS-FP	NS-FP
MW-3	6/23/2020	NS-FP	NS-FP	NS-FP	NS-FP
MW-3	5/24/2021	NS-FP	NS-FP	NS-FP	NS-FP
MW-4	12/15/1998	44	11	5.8	4.8
MW-4	2/9/1999	11,000	16,000	730	7,300
MW-4	4/21/1999	68	25	9.3	13
MW-4	7/2/1999	11,000	14,000	700	6,700
MW-4	3/23/2000	11,000	13,000	770	7,800
MW-4	6/14/2000	28	42	7	135
MW-4	11/17/2000	59.9	104	2.94	98.3
MW-4	1/31/2001	30.3	81.0	5.20	156
MW-4	4/30/2001	36.1	56.1	1.32	73
MW-4	10/10/2001	24	28	<2.0	47
MW-4	12/2/2003	2.3	2.7	<2.0	6.5
MW-4	9/20/2004	3.6	3.2	<2.0	9.8
MW-4	12/3/2004	2.5	2.3	<2.0	8
MW-4	3/10/2005	3.0	3.5	<2.0	11
MW-4	6/18/2005	<2.0	3	<2.0	8.6
MW-4	9/16/2005	<2.0	2.3	<2.0	9.4
MW-4	11/30/2005	<2.0	<2.0	<2.0	10.4
MW-4	7/13/2006	2.9	<1.0	1.0	9.9
MW-4	9/21/2006	1.2	<1.0	<1.0	9.6
MW-4	3/29/2010	1.3	<1.0	<1.0	8.7
MW-4	6/18/2010	<1.0	<1.0	<1.0	6.8
MW-4	9/10/2010	<1.0	<1.0	<1.0	3.9
MW-4	12/4/2010	<1.0	<1.0	<1.0	5.6
MW-4	3/2/2011	<1.0	<1.0	<1.0	3
MW-4	6/14/2011	<1.0	<1.0	<1.0	6
MW-4	9/12/2011	<1.0	<1.0	<1.0	4.7
MW-4	1/3/2012	<1.0	<1.0	<1.0	5.4
MW-4	4/2/2012	<1.0	<1.0	<1.0	6.1
MW-4	6/13/2012	<1.0	<1.0	<1.0	3.7
MW-4	10/2/2012	<1.0	<1.0	<1.0	4.5
MW-4	12/6/2012	<1.0	<1.0	<1.0	6
MW-4	3/1/2013	<1.0	<1.0	<1.0	<2.0
MW-4	11/1/2019	<1.0	<1.0	<1.0	<1.5
MW-4	6/23/2020	NS	NS	NS	NS
MW-4	5/24/2021	NS	NS	NS	NS
MW-5	6/14/2000	1,100	710	100	1,100
MW-5	6/14/2000	890	570	80	900
MW-5	11/17/2000	161	110	8.09	60.8
MW-5	4/30/2001	15.7	21.6	2.01	17.9
MW-5	10/10/2001	380	120	19	220
MW-5	12/2/2003	41	7.9	3.1	10
MW-5	9/20/2004	17	3.7	<2.0	9.9

TABLE 2
GROUNDWATER LABORATORY ANALYTICAL RESULTS
FLORACE #47X
SAN JUAN COUNTY, NEW MEXICO

Well Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standard (µg/L)		5	1000	700	620
MW-5	12/9/2004	13	3.3	<2.0	14
MW-5	3/10/2005	5.5	<2.0	<2.0	6.3
MW-5	7/13/2006	920	74	34.7	1,980
MW-5	9/21/2006	135	19.2	17.0	409
MW-5	4/2/2012	NS	NS	NS	NS
MW-5	6/13/2012	NS	NS	NS	NS
MW-5	10/2/2012	NS	NS	NS	NS
MW-5	12/6/2012	NS	NS	NS	NS
MW-5	3/1/2013	NS-FP	NS-FP	NS-FP	NS-FP
MW-5	6/24/2013	930	<50	98	1,100
MW-5	9/12/2013	2,400	40	250	3,800
MW-5	12/4/2013	410	46	51	1,000
MW-5	3/19/2014	920	3.1	100	660
MW-5	6/13/2014	4,000	<20	480	1,700
MW-5	9/11/2014	3,000	33	370	2,800
MW-5	12/4/2014	3,000	14	390	2,900
MW-5	3/17/2015	570	<10	52	660
MW-5	4/28/2016	270	<10	30	400
MW-5	4/28/2017	380	<2.0	55	560
MW-5	11/1/2019	2,200	<1.0	150	210
MW-5	6/23/2020	360	<2.0	2.4	210
MW-5	5/24/2021	58	<5.0	<5.0	21
MW-6	11/1/2019	<1.0	<1.0	<1.0	<1.5
MW-6	6/23/2020	<1.0	<1.0	<1.0	<1.5
MW-6	5/4/2021	<1.0	<1.0	<1.0	<2.0
MW-7	11/1/2019	<1.0	<1.0	<1.0	<1.5
MW-7	6/23/2020	<1.0	<1.0	<1.0	<1.5
MW-7	5/4/2021	<1.0	<1.0	<1.0	<2.0

Notes:

< - indicates result is less than laboratory reporting detection limit

µg/L - micrograms per liter

NMWQCC - New Mexico Water Quality Control Commission

NS - not sampled

NS-FP - not sampled due to the presence of free phase hydrocarbons in the well

NSO - not sampled due to obstruction

Bold - indicates sample exceeds NMWQCC standard

TABLE 3

**PNEUMATIC PRODUCT RECOVERY SYSTEM DATA
FLORANCE #47X
SAN JUAN COUNTY, NEW MEXICO**

Date	Well ID	Cycles	Run Time (hours)	Cycles (Lifetime)	Lifetime (hours)	Estimated Product Recovered (gallons)	Depth to Product (feet)	Depth to Water (feet)	PSH Thickness (feet)	Battery Voltage	System ON/OFF	Any Faults	Notes/Maintenance Completed
11/18/2019	MW-3	0	0:00:00	1809	160:07:11	0.0	91.26	93.19	1.93	12.7	ON	NO	Installed sipper at MW-3 vac: 18s, press: 40s, delay: 8 hours
12/3/2019	MW-3	47	13:23:00	1856	6:16:10	0.9	91.55	93.49	1.94	12.7	ON	NO	2.5 ounces per cycle
1/9/2020	MW-3	158	2:23:03	1967	19:06:13	2.7	91.5	93.01	1.51	12.7	ON	NO	2 oz. per cycle, 5 inches of product in barrel
1/30/2020	MW-3	221	71:23:46	2030	232:06:56	4.1	91.59	93.12	1.53	12.8	ON	NO	3 oz. product per cycle delay set to 6 hours.
2/26/2020	MW-3	303	99:04:18	2112	0003:11:28	5.4	91.8	93.1	1.3	12.8	ON	NO	2 oz per cycle, changed delay to 6 hours.
3/19/2020	MW-3	390	120:22:41	2199	0025:05:52	6.8	91.62	92.85	1.23	12.8	ON	NO	2 oz per cycle, ~4.5 inches of product in barrel
4/1/2020	MW-3	391	120:23:13	2200	0025:06:23	6.8	91.46	92.95	1.49	12.7	ON	NO	~ 1 oz per cycle, changed solar panel to 26 degrees from 0.
4/20/2020	MW-3	467	139:23:28	2276	0044:06:38	7.4	91.7	92.49	0.79	12.7	ON	NO	Cleaned panel/pump, ~ 5" inches of product in barrel
5/4/2020	MW-3	523	154:00:04	2332	0058:04:15	7.8	91.83	92.4	0.57	12.7	ON	NO	Cleaned panel/pump, 6" inches of product in barrel. 1 oz recovered in cycle.
6/23/2020	MW-3	727	204:01:16	2536	108:08:27	12.6	91.83	92.41	0.58	12.9	ON	NO	Clean pump, 9" of product in barrel 3 oz. recovered per cycle.
7/24/2020	MW-3	861	235:00:56	2670	139:08:07	17.8	91.84	92.44	0.6	12.9	ON	NO	Clean pump/solar panel, 9" of product in barrel, bailed 5 oz of product from well
8/6/2020	MW-3	918	248:02:02	2727	152:09:12	18.3	91.84	91.87	0.03	12.9	ON	NO	Clean pump/solar panel, 9" of product in barrel
9/8/2020	MW-3	1061	25:00:01	2870	185:07:11	20.5	91.66	91.71	0.05	12.9	ON	NO	Change vacuum to 10 seconds and delay to 10 hours
9/25/2020	MW-3	1070	28:08:15	2879	188:15:26	20.6	91.72	92.69	0.97	13.3	ON	Intake Overload	Clean pump/solar panel, 16" of product in barrel, Repair cracked intake lines
10/14/2020	MW-3	1098	40:00:58	2907	200:08:08	21.1	91.87	92.5	0.63	12.7	ON	Intake Overload	Clean pump/solar panel, 20" of product in barrel, Repair cracked intake lines. Polytube needs to be replaced with vinyl.
10/26/2020	MW-3	1110	44:05:25	2912	204:12:36	21.3	91.72	92.69	0.97	12.6	ON	Intake Overload	21" of product in barrel, replace intake lines. Clean snow of solar Panel.
11/4/2020	MW-3	1118	44:05:25	2927	204:12:36	21.4	91.7	92.66	0.96	12.6	ON	Intake Overload	22" of product in barrel.
11/24/2020	MW-3	1121	48:19:28	2930	209:02:39	21.4	91.59	92.71	1.12	13	ON	Intake Overload	21" of product in barrel. Clean solar Panel.
12/4/2020	MW-3	1140	58:17:47	2949	219:00:57	21.7	91.72	92.90	1.18	12.6	ON	NO	Increase pressure cycle to 2:15 to clear intake. Delay set to 10 hours
12/18/2020	MW-3	1173	72:16:37	2982	232:23:47	22.2	91.69	92.90	1.21	12.7	ON	NO	~ 6" in barrel, 1 oz recovered in cycle
12/30/2020	MW-3	1180	75:05:06	2989	235:12:16	22.3	91.7	93.02	1.32	12.7	ON	Intake Overload	Cleaned pump, attached white tubing from pump back to solar sipper control box, changed solar pannel angle to 51 degrees for winter, 1 oz PSH recovered in cycle, ~6" in barrel.

Date	Well ID	Cycles	Run Time (hours)	Cycles (Lifetime)	Lifetime (hours)	Estimated Product Recovered (gallons)	Depth to Product (feet)	Depth to Water (feet)	PSH Thickness (feet)	Battery Voltage	System ON/OFF	Any Faults	Notes/Maintenance Completed
1/13/2021	MW-3	1214	89:05:49	3023	249:13:00	22.8	91.78	92.48	0.7	12.7	ON	NO	~6.5" PSH in bbl. Cleaned solar pannel. 2 oz yello/brown PSH recoverd in cycle.
2/1/2021	MW-3	1256	106:19:27	3065	11:02:37	23.5	92.07	92.64	0.57	12.8	ON	Intake Overload	~18" PSH in bbl. Cleaned solar pannel. 3 oz yello/brown PSH recoverd in cycle. Intake line cracked, repair and system returned to normal operation
2/16/2021	MW-3	1295	121:18:34	3104	26:01:44	24.1	91.64	92.69	1.05	13.6	ON	Intake Overload	~19" PSH in bbl. Air line frozen at well head, Warmed with hand and ran 2 cycles to clear condensation in line.
3/12/2021	MW-3	1330	135:06:54	3139	39:14:04	24.6	91.54	92.89	1.35	12.7	ON	Intake Overload	Cleaned out air lines
3/31/2021	MW-3	1402	152:16:33	3211	56:23:43	25.8	92.08	92.6	0.52	12.8	ON	Intake Overload	~19" PSH in bbl. Replaced Discharge line.
4/15/2021	MW-3	1437	163:09:42	3246	67:16:52	26.0	92.00	92.70	0.70	14.3	ON	No	Angle solar panel to 54 degrees for summer sun.
5/24/2021	MW-3	1448	166:23:46	3257	71:06:56	26.1	91.68	92.91	1.23	12.8	ON	Intake Overload	Attached air supply line back to panel side.

Notes:

PSH - phase separated hydrocarbons

ENCLOSURE A – LABORATORY ANALYTICAL RESULTS



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

July 01, 2020

Brooke Herb

Harvest

1755 Arroyo Dr.

Bloomfield, NM 87413

TEL: (505) 632-4475

FAX:

RE: Florance 47x

OrderNo.: 2006C07

Dear Brooke Herb:

Hall Environmental Analysis Laboratory received 4 sample(s) on 6/24/2020 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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 2006C07

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/1/2020

CLIENT: Harvest

Client Sample ID: MW-2

Project: Florance 47x

Collection Date: 6/23/2020 1:05:00 PM

Lab ID: 2006C07-001A

Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	8200	200	P	µg/L	200	6/27/2020 2:47:29 AM	SL69947
Toluene	ND	20	P	µg/L	20	6/27/2020 3:15:57 AM	SL69947
Ethylbenzene	410	20	P	µg/L	20	6/27/2020 3:15:57 AM	SL69947
Xylenes, Total	150	30	P	µg/L	20	6/27/2020 3:15:57 AM	SL69947
Surr: 1,2-Dichloroethane-d4	103	70-130	P	%Rec	20	6/27/2020 3:15:57 AM	SL69947
Surr: 4-Bromofluorobenzene	97.2	70-130	P	%Rec	20	6/27/2020 3:15:57 AM	SL69947
Surr: Dibromofluoromethane	103	70-130	P	%Rec	20	6/27/2020 3:15:57 AM	SL69947
Surr: Toluene-d8	103	70-130	P	%Rec	20	6/27/2020 3:15:57 AM	SL69947

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order: 2006C07

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/1/2020

CLIENT: Harvest

Client Sample ID: MW-5

Project: Florance 47x

Collection Date: 6/23/2020 12:30:00 PM

Lab ID: 2006C07-002A

Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	360	20	P	µg/L	20	6/27/2020 4:13:13 AM	SL69947
Toluene	ND	2.0	P	µg/L	2	6/27/2020 1:42:15 PM	SL69957
Ethylbenzene	2.4	2.0	P	µg/L	2	6/27/2020 1:42:15 PM	SL69957
Xylenes, Total	210	3.0	P	µg/L	2	6/27/2020 1:42:15 PM	SL69957
Surr: 1,2-Dichloroethane-d4	100	70-130	P	%Rec	2	6/27/2020 1:42:15 PM	SL69957
Surr: 4-Bromofluorobenzene	173	70-130	SP	%Rec	2	6/27/2020 1:42:15 PM	SL69957
Surr: Dibromofluoromethane	99.8	70-130	P	%Rec	2	6/27/2020 1:42:15 PM	SL69957
Surr: Toluene-d8	99.2	70-130	P	%Rec	2	6/27/2020 1:42:15 PM	SL69957

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order: 2006C07

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/1/2020

CLIENT: Harvest

Client Sample ID: MW-6

Project: Florance 47x

Collection Date: 6/23/2020 11:50:00 AM

Lab ID: 2006C07-003A

Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	6/27/2020 4:41:42 AM	SL69947
Toluene	ND	1.0		µg/L	1	6/27/2020 4:41:42 AM	SL69947
Ethylbenzene	ND	1.0		µg/L	1	6/27/2020 4:41:42 AM	SL69947
Xylenes, Total	ND	1.5		µg/L	1	6/27/2020 4:41:42 AM	SL69947
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	6/27/2020 4:41:42 AM	SL69947
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	6/27/2020 4:41:42 AM	SL69947
Surr: Dibromofluoromethane	107	70-130		%Rec	1	6/27/2020 4:41:42 AM	SL69947
Surr: Toluene-d8	106	70-130		%Rec	1	6/27/2020 4:41:42 AM	SL69947

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order: 2006C07

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/1/2020

CLIENT: Harvest

Client Sample ID: MW-7

Project: Florance 47x

Collection Date: 6/23/2020 11:20:00 AM

Lab ID: 2006C07-004A

Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	6/26/2020 11:27:18 PM	SL69947
Toluene	ND	1.0		µg/L	1	6/26/2020 11:27:18 PM	SL69947
Ethylbenzene	ND	1.0		µg/L	1	6/26/2020 11:27:18 PM	SL69947
Xylenes, Total	ND	1.5		µg/L	1	6/26/2020 11:27:18 PM	SL69947
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	6/26/2020 11:27:18 PM	SL69947
Surr: 4-Bromofluorobenzene	98.2	70-130		%Rec	1	6/26/2020 11:27:18 PM	SL69947
Surr: Dibromofluoromethane	104	70-130		%Rec	1	6/26/2020 11:27:18 PM	SL69947
Surr: Toluene-d8	104	70-130		%Rec	1	6/26/2020 11:27:18 PM	SL69947

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
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	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2006C07

02-Jul-20

Client: Harvest
Project: Florance 47x

Sample ID: mb1	SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: PBW	Batch ID: SL69947	RunNo: 69947								
Prep Date:	Analysis Date: 6/26/2020	SeqNo: 2429275 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	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.1	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: LCSW	Batch ID: SL69947	RunNo: 69947								
Prep Date:	Analysis Date: 6/26/2020	SeqNo: 2429276 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		92.6	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.4	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: mb1	SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: PBW	Batch ID: SL69957	RunNo: 69957								
Prep Date:	Analysis Date: 6/27/2020	SeqNo: 2429861 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.4	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: LCSW	Batch ID: SL69957	RunNo: 69957								
Prep Date:	Analysis Date: 6/27/2020	SeqNo: 2429862 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	20	1.0	20.00	0	98.8	70	130			

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 Quantitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2006C07

02-Jul-20

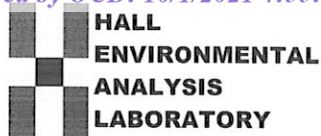
Client: Harvest
Project: Florance 47x

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: LCSW	Batch ID: SL69957	RunNo: 69957								
Prep Date:	Analysis Date: 6/27/2020	SeqNo: 2429862	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.9	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.5	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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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: **Harvest**Work Order Number: **2006C07**

RcptNo: 1

Received By: **Emily Mocho**

6/24/2020 8:00:00 AM

Completed By: **Emily Mocho**

6/24/2020 9:27:36 AM

Reviewed By: **JO**

6/24/20

Chain of Custody

1. Is Chain of Custody 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 $>0^{\circ}\text{C}$ 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: Em 6/24/20

Special Handling (if applicable)

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

Person Notified: Eric CarrollDate: 6/29/20By Whom: Reah BacaVia: ☒ eMail ☐ Phone ☐ Fax ☐ In PersonRegarding: -001 Name on bottle was MW-4Client Instructions: Report Name as MW-2

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Not Present			

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 53573

CONDITIONS

Operator: Harvest Four Corners, LLC 1111 Travis Street Houston, TX 77002	OGRID:	373888
	Action Number:	53573
	Action Type:	[UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Review of 2020 Annual Groundwater Report: Content satisfactory 1. Continue with future work as stated within 2020 Annual Groundwater Report. a. monthly site visits for O&M purposes b. groundwater monitoring through quarterly well gauging c. annual groundwater sampling for laboratory analysis of BTEX compounds d. Submit the Annual Monitoring Report to the OCD no later than March 31, 2022	1/3/2022