



October 6, 2021

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Harvest Four Corners
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Bloomfield, NM 87413

Subject: 2020 Annual Groundwater Report
Jicarilla Contract 147-6
Incident Number: nAUTOfAB000298
Rio Arriba County, New Mexico

1. Continue with monitoring plan as stated within 2020 Annual Groundwater Report
2. Submit annual report no later than March 31, 2022

INTRODUCTION

WSP USA Inc. (WSP) has prepared this report on behalf of Harvest Four Corners, LLC (Harvest) detailing groundwater monitoring activities completed in June 2020 at the Jicarilla Contract 147-6 natural gas production well (Site), Administrative Environmental Order Number 3RP-325-0. The scope of work for this project is continued monitoring of the petroleum hydrocarbon impacts to groundwater resulting from a release from a former unlined dehydrator pit.

LOCATION

The Site is located at latitude 36.433803 and longitude -107.403562 in Unit C, Section 6, Township 25 North, Range 5 West (Figure 1). The Site is adjacent to a tributary of Tapacito Creek, which drains into Largo Wash, in the San Juan Basin of Rio Arriba County, New Mexico.

HISTORY

The source of groundwater impact is a former unlined dehydrator pit formerly operated by the Gas Company of New Mexico (GCNM/PNM). In July 1998, over 12,000 cubic yards of impacted soil were excavated from the Site. A groundwater sample collected from the open excavation at approximately 26 feet below ground surface (bgs) contained 1,400 micrograms per liter (µg/L) of benzene, 4,500 µg/L of toluene, 580 µg/L of ethylbenzene, and 6,800 µg/L of total xylenes. In January 1999, five monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5) were installed. Based on the analytical results of groundwater sampling, an additional five monitoring wells (MW-6, MW-7, MW-8, MW-9, and MW-10) were installed in 1999 and 2000. Over time, three monitoring wells (MW-4, MW-5, and MW-7) located near a wash adjacent to the Site were destroyed by erosion. Records regarding these activities are in previous groundwater reports submitted to the New Mexico Oil Conservation Division (NMOCD). Williams purchased the GCNM facility from PNM in 2000 and assumed environmental liability for the former unlined dehydrator pit. Between 2000 and December 2012, Williams monitored groundwater quality in the monitoring wells at the Site. Williams installed two monitoring wells (MW-11 and MW-12) on October 21, 2013 to better understand Site conditions. Williams installed two additional monitoring wells (MW-13 and MW-14) on November 20, 2017. In 2018, Harvest purchased the facility from Williams and assumed environmental liability for the Site.

METHODOLOGY

WSP monitored groundwater elevations and collected groundwater samples in June 2020. Groundwater monitoring consisted of measuring groundwater elevations in ten existing monitoring wells and sampling groundwater in monitoring wells MW-3, MW-6, MW-9, and MW-11. Upgradient monitoring wells MW-1, MW-2, MW-8, and

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MW-10 were not sampled due to eight previous quarters of sampling documenting benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations were compliant with New Mexico Water Quality Control Commission (NMWQCC) standards. Monitoring well MW-12 was destroyed by erosion before the 2020 groundwater sampling event, monitoring well MW-13 was dry, and monitoring well MW-14 bailed dry at 1.5 gallons with no recharge observed in the well after an hour and a half after purging.

WATER LEVEL MEASUREMENTS

WSP measured depth to groundwater in the monitoring wells and investigated the presence of phase-separated hydrocarbons (PSH) with a Keck® oil/water interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each measurement. These data are summarized in Table 1.

GROUNDWATER SAMPLING

Prior to sampling groundwater, WSP measured depth to groundwater and total depth of monitoring wells with a Keck® oil/water interface probe. The volume of groundwater in each monitoring well was calculated and a minimum of three well casing volumes of groundwater was purged from each well using a new, disposable polyvinyl chloride (PVC) bailer. As water was removed from the monitoring well, pH, electrical conductivity (EC), and temperature were measured. Monitoring wells were purged until these properties stabilized, indicating the purge water was representative of aquifer conditions, or until the well was purged dry. Purge water was containerized and disposed of at a facility designated by Harvest. Copies of the 2020 groundwater collection field forms are presented in Enclosure A.

Once each monitoring well was properly purged, groundwater samples were collected by filling three 40-milliliter (ml) glass vials. The laboratory-supplied vials were filled and capped with zero headspace to prevent degradation of the sample. Samples were labeled and immediately sealed, packed on ice, and transferred to Hall Environmental Analysis Laboratory (HEAL) under chain-of-custody (COC) procedures for analysis of BTEX using United States Environmental Protection Agency (EPA) Method 8021. COC forms were completed documenting the date and time sampled, sample number, type of sample, sampler's name, preservative used (if any), analyses required, and sampler's signature. Laboratory analytical reports are included as Enclosure B.

GROUNDWATER CONTOUR MAPS

WSP used existing top-of-casing well elevations and measured groundwater elevations to generate groundwater potentiometric surfaces and determine groundwater flow direction for the June 2020 monitoring event (Figure 2). All existing monitoring wells were surveyed by Williams personnel on January 3, 2018 and top-of-casing elevations for that surveying event were used for the groundwater contour map. Monitoring well MW-12 was damaged due to erosion and the top-of-casing has not been resurveyed. Potentiometric surfaces were inferred based on groundwater elevations obtained and observations of physical characteristics at the Site, such as topography and proximity to irrigation ditches.

RESULTS

Depth to groundwater measurements from 2020 are summarized in Table 1. PSH was not observed in 2020. Groundwater flow direction was determined to be to the north-northwest at the Site, which is consistent with previous monitoring events (Figure 2).

In June 2020, monitoring well MW-3 contained benzene concentrations of 570 µg/L, and total xylene concentrations of 2,000 µg/L. Monitoring well MW-6 contained benzene concentrations of 3,800 µg/L. Both samples exceed the NMWQCC groundwater standard of 5 µg/L benzene and the sample from MW-6 exceeds the standard of 620 µg/L

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total xylenes. Table 2 summarizes the groundwater analytical results and complete copies of the laboratory analytical reports are included in Enclosure B.

CONCLUSIONS

Laboratory analytical results indicate that groundwater samples collected from monitoring well MW-3 contain concentrations of benzene and total xylenes that exceed the NMWQCC groundwater standards, and MW-6 contain concentrations of benzene that also exceed the NMWQCC groundwater standards. The impacted groundwater plume remains stable, with similar gradient and flow direction. Detectable concentrations of benzene and total xylenes are within range of historic sampling results. Sample results from downgradient wells MW-9 and MW-14 contained no detectable concentrations of BTEX, suggesting the dissolved phase impacts are not migrating.

MONITORING PLAN

Harvest will continue to monitor groundwater elevations and for the presence of PSH in the existing monitoring wells annually. Harvest will continue to collect groundwater samples from monitoring wells MW-3, MW-6, and MW-14 to monitor impacts to groundwater, as well as monitoring wells MW-9, MW-11, and MW-13 to confirm the groundwater plume has not migrated.

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.

Figure 1: Site Location Map

Figure 2: Groundwater Elevations and Analytical Results (June 2020)

Table 1: Groundwater Elevation Summary

Table 2: Groundwater Analytical Results

Enclosure A: 2020 Sample Collection Forms

Enclosure B: Laboratory Analytical Results

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FIGURES

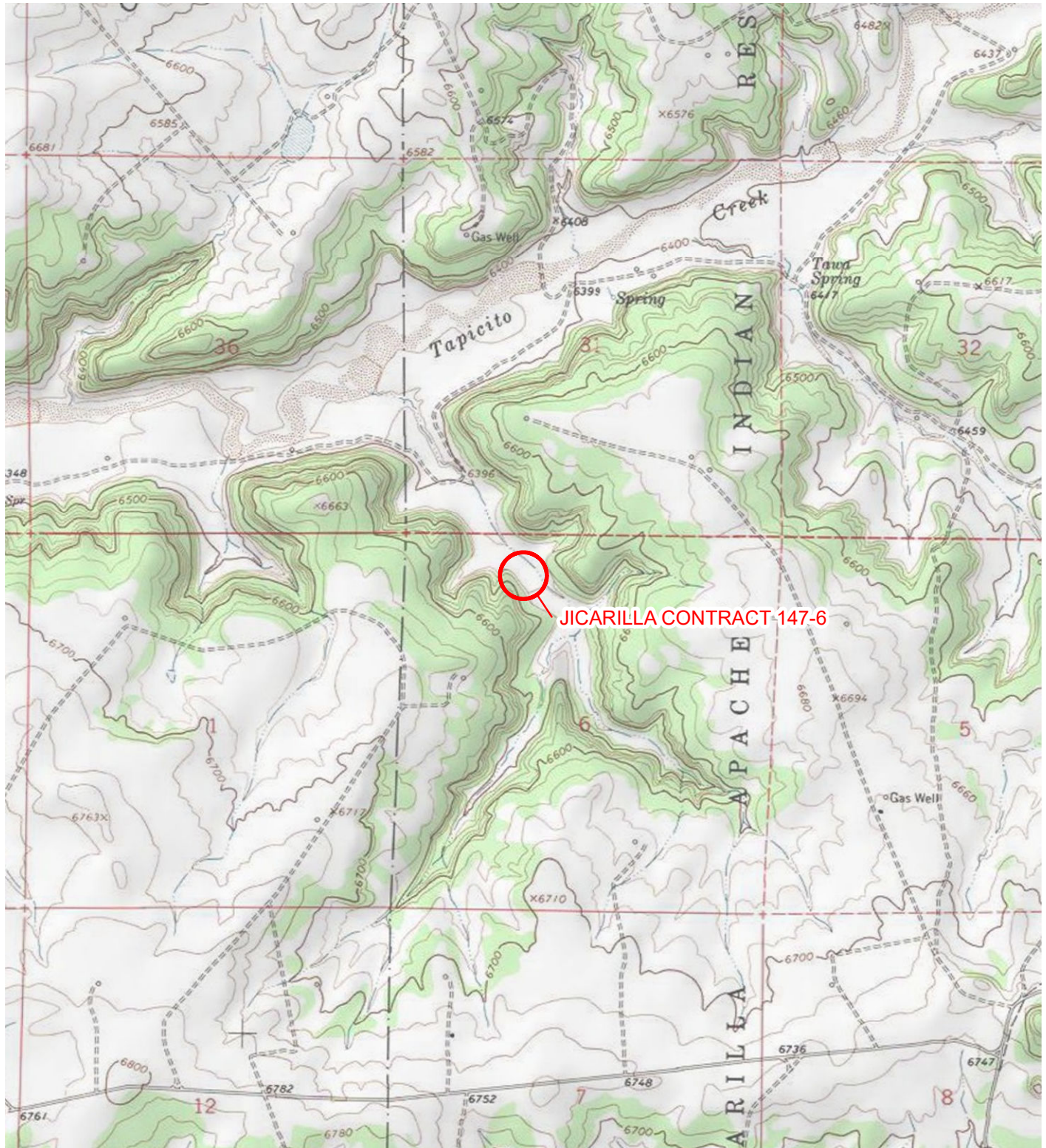


IMAGE COURTESY OF ESRI/USGS

LEGEND

 SITE LOCATION

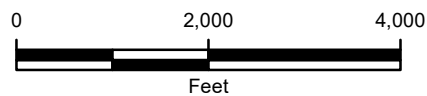
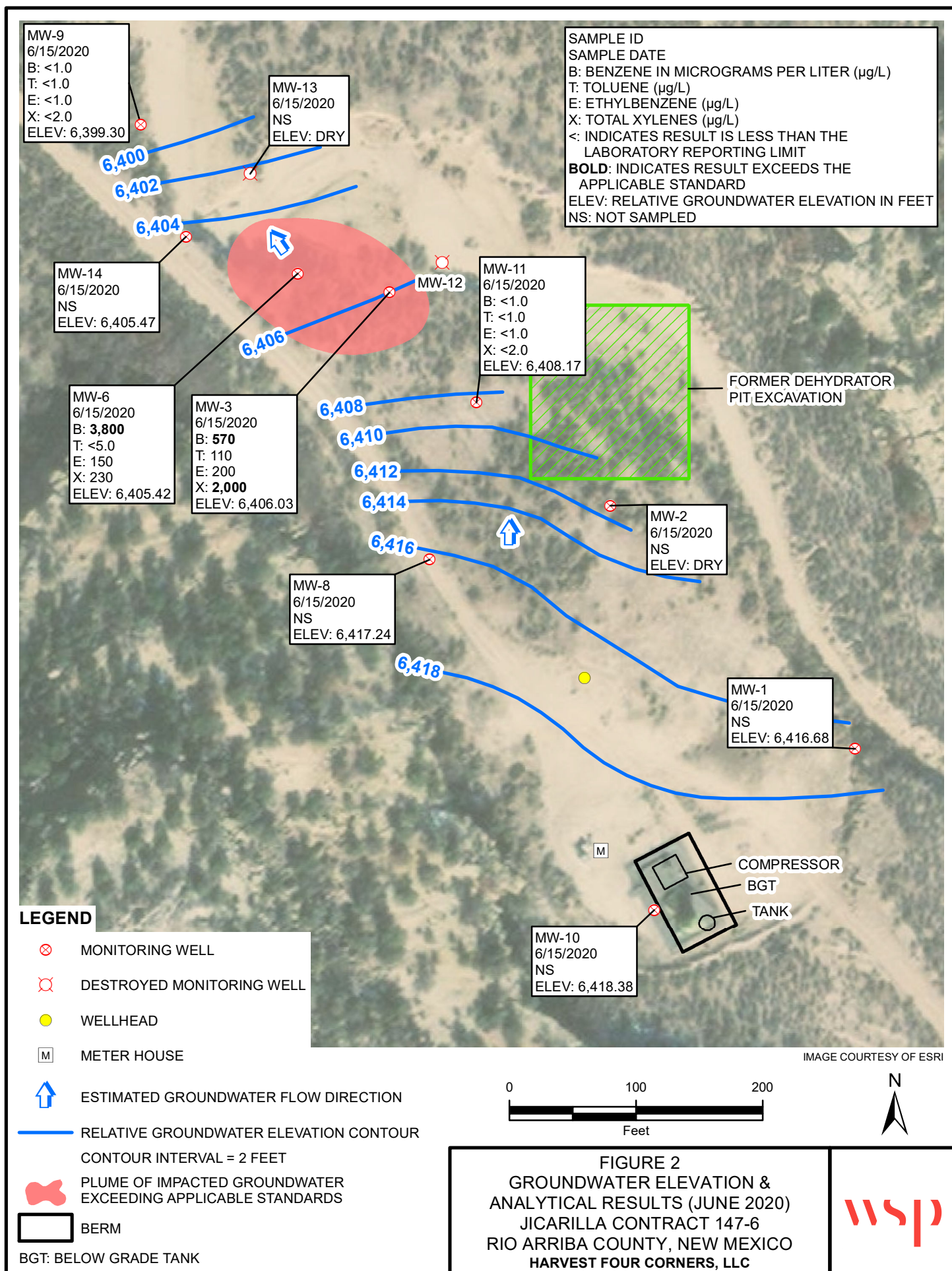


FIGURE 1
SITE LOCATION MAP
JICARILLA CONTRACT 147-6
RIO ARRIBA COUNTY, NEW MEXICO

HARVEST FOUR CORNERS, LLC





TABLES

TABLE 1

GROUNDWATER ELEVATIONS SUMMARY
JICARILLA CONTRACT 147-6
RIO ARriba COUNTY, NEW MEXICO

Well ID	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	3/4/2013	6,435.75	21.85	NP	NP	6,413.90
MW-1**	6/25/2013	6,440.95	22.51	NP	NP	6,418.44
MW-1	12/2/2013	6,440.95	21.11	NP	NP	6,419.84
MW-1	6/16/2014	6,440.95	21.82	NP	NP	6,419.13
MW-1	12/2/2014	6,440.95	21.76	NP	NP	6,419.19
MW-1	6/18/2015	6,440.95	21.90	NP	NP	6,419.05
MW-1	9/25/2015	6,440.95	21.72	NP	NP	6,419.23
MW-1	12/18/2015	6,440.95	21.61	NP	NP	6,419.34
MW-1	6/14/2016	6,440.95	21.99	NP	NP	6,418.96
MW-1	6/27/2017	6,440.95	22.90	NP	NP	6,418.05
MW-1	6/26/2018	6,440.95	23.19	NP	NP	6,417.76
MW-1	6/26/2019	6,440.95	23.12	NP	NP	6,417.83
MW-1	6/15/2020	6,440.95	24.27	NP	NP	6,416.68
MW-2*	3/4/2013	6,432.70	22.34	22.33	0.01	6,411.17
MW-2**	6/25/2013	6,437.27	22.90	NP	NP	6,414.37
MW-2	12/2/2013	6,437.27	21.76	NP	NP	6,415.51
MW-2	6/16/2014	6,437.27	22.39	NP	NP	6,414.88
MW-2	12/2/2014	6,437.27	22.33	NP	NP	6,414.94
MW-2	6/18/2015	6,437.27	22.41	NP	NP	6,414.86
MW-2	9/25/2015	6,437.27	22.76	NP	NP	6,414.51
MW-2	12/18/2015	6,437.27	22.31	NP	NP	6,414.96
MW-2	6/14/2016	6,437.27	22.46	NP	NP	6,414.81
MW-2	6/27/2017	6,437.27	23.06	NP	NP	6,414.21
MW-2	6/26/2018	6,437.27	DRY	NP	NP	DRY
MW-2	6/26/2019	6,437.27	DRY	NP	NP	DRY
MW-2	6/15/2020	6,437.27	DRY	NP	NP	DRY
MW-3	3/4/2013	6,422.80	21.26	NP	NP	6,401.54
MW-3**	6/25/2013	6,427.87	21.37	NP	NP	6,406.50
MW-3	12/2/2013	6,427.87	21.44	NP	NP	6,406.43
MW-3	6/16/2014	6,427.87	20.73	NP	NP	6,407.14
MW-3	12/9/2014	6,427.87	21.59	NP	NP	6,406.28
MW-3	6/18/2015	6,427.87	20.58	NP	NP	6,407.29
MW-3	9/25/2015	6,427.87	21.61	NP	NP	6,406.26
MW-3	12/18/2015	6,427.87	21.38	NP	NP	6,406.49
MW-3	6/14/2016	6,427.87	20.57	NP	NP	6,407.30
MW-3	6/27/2017	6,427.87	21.04	NP	NP	6,406.83
MW-3***	12/1/2017	6,427.63	21.72	21.70	0.02	6,405.93
MW-3	6/26/2018	6,427.63	21.28	NP	NP	6,406.35
MW-3	6/26/2019	6,427.63	21.08	NP	NP	6,406.55

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RIO ARRIBA COUNTY, NEW MEXICO

Well ID	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-3	6/15/2020	6,427.63	21.60	NP	NP	6,406.03
MW-4	3/4/2013	DEST	DEST	DEST	DEST	DEST
MW-5	3/4/2013	DEST	DEST	DEST	DEST	DEST
MW-6	3/4/2013	6,426.77	25.61	NP	NP	6,401.16
MW-6**	6/25/2013	6,431.94	26.14	NP	NP	6,405.80
MW-6	12/2/2013	6,431.94	26.08	NP	NP	6,405.86
MW-6	6/16/2014	6,431.94	25.39	NP	NP	6,406.55
MW-6	12/2/2014	6,431.94	26.31	NP	NP	6,405.63
MW-6	6/18/2015	6,431.94	25.21	NP	NP	6,406.73
MW-6	9/25/2015	6,431.94	26.47	NP	NP	6,405.47
MW-6	12/18/2015	6,431.94	26.09	NP	NP	6,405.85
MW-6	6/14/2016	6,431.94	25.26	NP	NP	6,406.68
MW-6	6/27/2017	6,431.94	25.80	NP	NP	6,406.14
MW-6***	12/1/2017	6,431.71	26.34	26.32	0.02	6,405.39
MW-6	6/26/2018	6,431.71	26.27	NP	NP	6,405.44
MW-6	6/26/2019	6,431.71	25.85	NP	NP	6,405.86
MW-6	6/15/2020	6,431.71	26.29	NP	NP	6,405.42
MW-7	3/4/2013	DEST	DEST	DEST	DEST	DEST
MW-8	3/4/2013	6,430.33	16.36	NP	NP	6,413.97
MW-8**	6/25/2013	6,435.14	17.31	NP	NP	6,417.83
MW-8	12/2/2013	6,435.14	17.65	NP	NP	6,417.49
MW-8	6/16/2014	6,435.14	16.82	NP	NP	6,418.32
MW-8	12/2/2014	6,435.14	16.79	NP	NP	6,418.35
MW-8	6/18/2015	6,435.14	16.62	NP	NP	6,418.52
MW-8	9/25/2015	6,435.14	17.35	NP	NP	6,417.79
MW-8	12/18/2015	6,435.14	16.58	NP	NP	6,418.56
MW-8	6/14/2016	6,435.14	16.80	NP	NP	6,418.34
MW-8	6/27/2017	6,435.14	17.33	NP	NP	6,417.81
MW-8	6/26/2018	6,435.14	17.61	NP	NP	6,417.53
MW-8	6/26/2019	6,435.14	17.37	NP	NP	6,417.77
MW-8	6/15/2020	6,435.14	17.90	NP	NP	6,417.24
MW-9	3/4/2013	6,423.04	28.55	NP	NP	6,394.49
MW-9**	6/25/2013	6,428.08	28.83	NP	NP	6,399.25
MW-9	12/2/2013	6,428.08	28.65	NP	NP	6,399.43
MW-9	6/16/2014	6,428.08	28.08	NP	NP	6,400.00

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RIO ARriba COUNTY, NEW MEXICO**

Well ID	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-9	12/2/2014	6,428.08	28.45	NP	NP	6,399.63
MW-9	6/18/2015	6,428.08	27.83	NP	NP	6,400.25
MW-9	9/25/2015	6,428.08	28.86	NP	NP	6,399.22
MW-9	12/18/2015	6,428.08	28.52	NP	NP	6,399.56
MW-9	6/14/2016	6,428.08	28.64	NP	NP	6,399.44
MW-9	6/27/2017	6,428.08	28.29	NP	NP	6,399.79
MW-9	6/26/2018	6,428.08	28.45	NP	NP	6,399.63
MW-9	6/26/2019	6,428.08	28.11	NP	NP	6,399.97
MW-9	6/15/2020	6,428.08	28.78	NP	NP	6,399.30
MW-10*	3/4/2013	6,435.38	20.90	20.89	0.01	6,415.29
MW-10**	6/25/2013	6,440.48	21.59	NP	NP	6,418.89
MW-10	12/2/2013	6,440.48	20.93	NP	NP	6,419.55
MW-10	6/16/2014	6,440.48	21.14	NP	NP	6,419.34
MW-10	12/2/2014	6,440.48	21.17	NP	NP	6,419.31
MW-10	6/18/2015	6,440.48	21.01	NP	NP	6,419.47
MW-10	9/25/2015	6,440.48	21.56	NP	NP	6,418.92
MW-10	12/18/2015	6,440.48	21.01	NP	NP	6,419.47
MW-10	6/14/2016	6,440.48	21.12	NP	NP	6,419.36
MW-10	6/27/2017	6,440.48	21.63	NP	NP	6,418.85
MW-10	6/26/2018	6,440.48	21.76	NP	NP	6,418.72
MW-10	6/26/2019	6,440.48	21.56	NP	NP	6,418.92
MW-10	6/15/2020	6,440.48	22.10	NP	NP	6,418.38
MW-11	12/2/2013	6,433.46	24.38	NP	NP	6,409.08
MW-11	6/16/2014	6,433.46	24.35	NP	NP	6,409.11
MW-11	12/2/2014	6,433.46	24.46	NP	NP	6,409.00
MW-11	6/18/2015	6,433.46	24.30	NP	NP	6,409.16
MW-11	9/25/2015	6,433.46	24.68	NP	NP	6,408.78
MW-11	12/18/2015	6,433.46	24.32	NP	NP	6,409.14
MW-11	6/14/2016	6,433.46	24.30	NP	NP	6,409.16
MW-11	6/27/2017	6,433.46	24.36	NP	NP	6,409.10
MW-11***	12/1/2017	6,432.86	24.35	NP	NP	6,408.51
MW-11	6/26/2018	6,432.86	24.43	NP	NP	6,408.43
MW-11	6/26/2019	6,432.86	24.22	NP	NP	6,408.64
MW-11	6/15/2020	6,432.86	24.69	NP	NP	6,408.17
MW-12	12/2/2013	6,429.62	21.87	NP	NP	6,407.75
MW-12	6/16/2014	6,429.62	21.65	NP	NP	6,407.97
MW-12	12/2/2014	6,429.62	22.20	NP	NP	6,407.42

TABLE 1

**GROUNDWATER ELEVATIONS SUMMARY
JICARILLA CONTRACT 147-6
RIO ARriba COUNTY, NEW MEXICO**

Well ID	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-12	6/18/2015	6,429.62	21.50	NP	NP	6,408.12
MW-12	9/25/2015	6,429.62	22.38	NP	NP	6,407.24
MW-12	12/18/2015	6,429.62	22.03	NP	NP	6,407.59
MW-12	6/14/2016	6,429.62	21.49	NP	NP	6,408.13
MW-12	6/27/2017	6,429.62	21.98	NP	NP	6,407.64
MW-12***	12/1/2017	6,428.74	22.25	NP	NP	6,406.49
MW-12	6/26/2018	6,428.74	22.21	NP	NP	6,406.53
MW-12	6/26/2019	6,428.74	15.29	NP	NP	UNK
MW-12	6/15/2020	DEST	DEST	DEST	DEST	DEST
MW-13	12/1/2017	6,422.01	13.10	NP	NP	6,408.91
MW-13	6/26/2018	6,422.01	DRY	NP	NP	DRY
MW-13	6/26/2019	6,422.01	DRY	NP	NP	DRY
MW-13	6/15/2020	6,422.01	DRY	NP	NP	DRY
MW-14	12/1/2017	6,428.45	23.28	NP	NP	6,405.17
MW-14	6/26/2018	6,428.45	23.50	NP	NP	6,404.95
MW-14	6/26/2019	6,428.45	22.50	NP	NP	6,405.95
MW-14	6/15/2020	6,428.45	22.98	NP	NP	6,405.47

Notes:

** - Top of casing elevation was resurveyed on 6/19/13

*** - Top of casing elevation was resurveyed on 1/3/2018

AMSL - above mean sea level

BTOC - below top of casing

DEST - well has been destroyed

NP - no product

UNK - Unknown

TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
JICARILLA CONTRACT 147-6
RIO ARRIBA 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	1,000	700	620
MW-1	1/28/1999	<0.5	1.5	<0.5	2.6
MW-1	4/14/1999	<0.5	<0.5	<0.5	<1.5
MW-1	9/27/1999	<0.5	<0.5	<0.5	<1.5
MW-1	11/15/1999	<0.5	<0.5	<0.5	<1.5
MW-1	2/13/2001	<1.0	<1.0	<1.0	<1.0
MW-1	5/9/2001	<1.0	<1.0	<1.0	<1.0
MW-1	11/2/2001	<1.0	3.1	<2.0	<2.0
MW-1	3/20/2010	<1.0	<1.0	<1.0	<3.0
MW-1	6/22/2010	<1.0	<1.0	<1.0	<3.0
MW-1	9/16/2010	<1.0	<1.0	<1.0	<3.0
MW-1	12/8/2010	<1.0	<1.0	<1.0	<3.0
MW-1	3/10/2011	<1.0	<1.0	<1.0	<3.0
MW-1	6/15/2011	<1.0	<1.0	<1.0	<3.0
MW-1	9/13/2011	<1.0	<1.0	<1.0	<3.0
MW-1	1/6/2012	<1.0	<1.0	<1.0	<3.0
MW-1	4/6/2012	<1.0	<1.0	<1.0	<3.0
MW-1	6/12/2012	<1.0	<1.0	<1.0	<3.0
MW-1	9/27/2012	<1.0	<1.0	<1.0	<3.0
MW-1	12/7/2012	<1.0	<1.0	<1.0	<3.0
MW-1	3/4/2013	<1.0	<1.0	<1.0	<2.0
MW-1	6/25/2013	<2.0	<2.0	<2.0	<4.0
MW-2	1/28/1999*	490	38	<5	1,700
MW-2	4/14/1999*	230	<5	<5	671
MW-2	10/14/1999	55	<0.5	2.6	196.5
MW-2	11/15/1999	130	<0.5	15	272
MW-2	3/20/2000	140	5.3	120	440*
MW-2	6/6/2000	52	<0.5	48	46
MW-2	2/13/2001	124	14.8	72.3	681
MW-2	5/9/2001	35.4	15.1	27	23
MW-2	11/2/2001	150	3.4	120	1,200
MW-2	9/24/2003	2.8	5.1	2.8	<5.0
MW-2	12/17/2003	2.5	5.9	<2.0	<5.0
MW-2	9/19/2004	<2.0	3.2	<2.0	<5.0
MW-2	12/4/2004	<2.0	2.4	<2.0	<5.0
MW-2	3/9/2005*	23	13	<10	<25
MW-2	9/17/2005	<2.0	<2.0	4.3	<5.0
MW-2	12/1/2005	<2.0	2.8	<2.0	<5.0
MW-2	3/20/2010	<1.0	<1.0	<1.0	<3.0

TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
JICARILLA CONTRACT 147-6
RIO ARRIBA 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	1,000	700	620
MW-2	6/22/2010	<1.0	<1.0	<1.0	<3.0
MW-2	9/16/2010	<1.0	<1.0	<1.0	4.8
MW-2	12/8/2010	<1.0	<1.0	<1.0	<3.0
MW-2	3/10/2011	<1.0	<1.0	<1.0	<3.0
MW-2	6/15/2011	<1.0	<1.0	<1.0	<3.0
MW-2	9/13/2011	<1.0	<1.0	<1.0	17.8
MW-2	1/6/2012	<1.0	<1.0	<1.0	<3.0
MW-2	4/6/2012	<1.0	<1.0	<1.0	<3.0
MW-2	6/12/2012	<1.0	<1.0	<1.0	<3.0
MW-2	9/27/2012	<1.0	<1.0	<1.0	18.5
MW-2	12/7/2012	<1.0	<1.0	<1.0	<3.0
MW-2	3/4/2013	NS	NS	NS	NS
MW-2	6/25/2013	<2.0	<2.0	8.1	19
MW-3	1/28/1999	7,100	5,900	260	4,130
MW-3	4/14/1999	6,700	3,100	220	3,360
MW-3	9/27/1999*	5,800	2,800	260	3,560
MW-3	11/15/1999*	5,200	1,800	200	2,970
MW-3	3/20/2000*	3,900	460	230	1,710
MW-3	6/7/2000*	4,400	64	190	1,232
MW-3	2/13/2001	7,250	1,660	305	5,800
MW-3	5/9/2001	7,810	1,860	531	7,610
MW-3	11/2/2001	6,700	7,400	420	7,900
MW-3	9/24/2003*	5,800	7,300	320	5,700
MW-3	12/17/2003	4,900	5,300	280	5,200
MW-3	9/19/2004*	5,400	9,500	310	6,500
MW-3	12/4/2004*	5,700	11,000	330	7,100
MW-3	3/9/2005*	4,700	7,900	280	5,600
MW-3	6/16/2005*	6,100	9,800	380	6,600
MW-3	9/17/2005	4,500	10,000	260	5,900
MW-3	12/1/2005*	5,570	9,970	324	6,760
MW-3	3/20/2010	3,590	1,990	252	2,310
MW-3	6/22/2010	2,710	1,080	191	1,170
MW-3	9/16/2010	3,240	3,630	219	2,210
MW-3	12/8/2010	2,950	3,380	229	1,900
MW-3	3/10/2011	1,800	729	122	1,900
MW-3	6/15/2011	2,150	1,710	124	1,000
MW-3	9/13/2011	3,460	4,500	330	4,670
MW-3	1/6/2012	1,790	1,970	144	1,400

TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
JICARILLA CONTRACT 147-6
RIO ARRIBA 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	1,000	700	620
MW-3	4/6/2012	1,900	127	955	1,040
MW-3	6/12/2012	2,700	203	4,990	2,890
MW-3	9/27/2012	2,070	194	4,380	2,690
MW-3	12/7/2012	1,650	145	1,810	1,630
MW-3	3/4/2013	1,200	720	88	680
MW-3	6/25/2013	2,300	3,300	250	4,000
MW-3	12/2/2013	2,900	7,700	350	5,700
MW-3	6/16/2014	1,700	1,400	120	3,100
MW-3	12/2/2014	910	600	110	1,500
MW-3	6/18/2015	2,300	7,300	300	6,000
MW-3	6/14/2016	930	820	130	2,200
MW-3	6/27/2017	1,500	1,700	280	4,700
MW-3	6/26/2018	540	<50	<50	2,100
MW-3	6/26/2019	100	13	15	310
MW-3	6/15/2020	570	110	200	2,000
MW-4	1/28/1999*	1,500	10,000	810	9,300
MW-4	4/14/1999*	280	30	5.0	500
MW-4	9/27/1999	56	<0.5	3.6	22
MW-4	11/15/1999	120	<0.5	8.1	41.5
MW-4	3/20/2000	250	<0.5	45	47
MW-4	6/7/2000	270	1.6	5.6	10.2
MW-4	2/13/2001	353	3.85	69.5	59.8
MW-4	5/9/2001	684	6.10	110	97.2
MW-4	11/2/2001	480	7.9	84	34
MW-4	9/24/2003	190	45	57	60
MW-4	12/17/2003	200	2.9	58	<5.0
MW-4	12/4/2004	170	<2.0	49	<5.0
MW-4	9/19/2004	55	<2.0	14	<5.0
MW-4	3/9/2005	68	<2.0	22	18
MW-4	6/16/2005	130	<2.0	40	<5.0
MW-4	9/17/2005	100	<2.0	38	55
MW-4	12/6/2005	100	<2.0	36.6	<5.0
MW-4	4/6/2012	NS	NS	NS	NS
MW-4	6/12/2012	NS	NS	NS	NS
MW-4	9/27/2012	NS	NS	NS	NS
MW-4	12/7/2012	NS	NS	NS	NS
MW-4**	3/4/2013	<2.0	<2.0	<2.0	<4.0
MW-4**	6/25/2013	DEST	DEST	DEST	DEST

TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
JICARILLA CONTRACT 147-6
RIO ARRIBA 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	1,000	700	620
MW-5	1/28/1999*	1,600	10,000	820	9,500
MW-5	4/14/1999*	310	26	3.6	479
MW-5	9/27/1999	<0.5	<0.5	1.5	2.0
MW-5	11/15/1999*	<2.5	6	39.0	<3.0
MW-5	3/20/2000	5.1	<0.5	210.0	8.0
MW-5	6/7/2000	1.5	<0.5	3.3	2.9
MW-5	2/13/2001	3.49	<1	222	31.5
MW-5	5/9/2001	4.68	20.8	244	28.7
MW-5	11/2/2001	2.8	<2.0	200	13
MW-5	3/4/2013	DEST	DEST	DEST	DEST
MW-6	9/27/1999*	16,000	460	280	1,299
MW-6	11/15/1999*	20,000	940	330	1,640
MW-6	3/20/2000*	18,000	630	380	1,530
MW-6	6/7/2000*	19,000	820	370	1,960
MW-6	2/13/2001	22,300	60	358	1,560
MW-6	5/9/2001	33,900	2,310	577	3,820
MW-6	11/2/2001	31,000	2,200	730	4,500
MW-6	9/24/2003*	18,000	1,200	370	2,000
MW-6	12/17/2003*	21,000	<400	500	2,200
MW-6	12/4/2004*	16,000	120	360	1,800
MW-6	9/19/2004*	18,000	1,900	380	2,300
MW-6	3/9/2005*	19,000	810	410	2,100
MW-6	6/16/2005*	24,000	<400	620	2,500
MW-6	9/17/2005	15,000	370	380	1,400
MW-6	12/1/2005*	15,600	957	460	2,580
MW-6	3/20/2010	19,400	10,900	570	3,330
MW-6	6/22/2010	13,500	<100	411	16,740
MW-6	9/16/2010	10,200	2,190	280	1,410
MW-6	12/8/2010	10,000	495	380	1,510
MW-6	3/10/2011	13,000	4,260	380	1,740
MW-6	6/15/2011	14,400	518	364	1,450
MW-6	9/13/2011	12,300	2,570	498	2,730
MW-6	1/6/2012	11,600	730	339	1,660
MW-6	4/6/2012	13,800	333	3,070	1,590
MW-6	6/12/2012	13,000	406	1,010	1,560
MW-6	9/27/2012	10,300	360	3,430	2,070
MW-6	12/7/2012	10,200	315	1,540	1,760
MW-6	3/4/2013	7,900	180	5.4	300

TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
JICARILLA CONTRACT 147-6
RIO ARRIBA 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	1,000	700	620
MW-6	6/25/2013	10,000	270	340	920
MW-6	12/2/2013	8,400	250	250	930
MW-6	6/16/2014	9,300	<100	270	350
MW-6	12/2/2014	6,600	120	210	700
MW-6	6/18/2015	5,600	<10	<10	120
MW-6	12/18/2015	NS	NS	NS	NS
MW-6	6/14/2016	5,200	<50	170	200
MW-6	6/27/2017	4,400	<5.0	140	130
MW-6	6/26/2018	4,900	<5.0	180	240
MW-6	6/26/2019	4,300	<5.0	150	280
MW-6	6/15/2020	3,800	<5.0	150	230
MW-7	10/14/1999	30	120	8.9	165
MW-7	11/15/1999	0.5	1.3	0.5	4.6
MW-7	3/20/2000	5.5	0.8	0.9	4.7
MW-7	6/7/2000	<0.5	<0.5	<0.5	<1.5
MW-7	2/13/2001	<1	<1	<1	<1
MW-7	5/9/2001	4.00	<1	<1	<1
MW-7	11/2/2001	16	<2.0	<2.0	2
MW-7	4/6/2012	NS	NS	NS	NS
MW-7	6/12/2012	NS	NS	NS	NS
MW-7	9/27/2012	NS	NS	NS	NS
MW-7	12/7/2012	NS	NS	NS	NS
MW-7	3/4/2013	DEST	DEST	DEST	DEST
MW-8	3/20/2000*	2,400	2,300	55.0	540
MW-8	6/7/2000*	1,100	130	27.0	106.7
MW-8	2/13/2001	613	16.2	13.0	12.4
MW-8	5/9/2001	182	3.65	6.98	2.41
MW-8	11/2/2001	370	<2.0	8.9	2.0
MW-8	9/24/2003	78	2.2	4.2	<5.0
MW-8	12/17/2003	55	<2.0	3.2	<5.0
MW-8	12/4/2004	19	<2.0	<2.0	<5.0
MW-8	9/19/2004	81	<2.0	2.8	<5.0
MW-8	3/9/2005	210*	4.6	5.2	8.6
MW-8	6/16/2005	43	<2.0	<2.0	<5.0
MW-8	9/17/2005	38	<2.0	<2.0	<5.0
MW-8	12/1/2005	23	<2.0	<2.0	<5.0
MW-8	3/20/2010	6.3	<1.0	<1.0	<3.0

TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
JICARILLA CONTRACT 147-6
RIO ARRIBA 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	1,000	700	620
MW-8	6/22/2010	3.0	<1.0	<1.0	<3.0
MW-8	9/16/2010	22.9	<1.0	<1.0	<3.0
MW-8	12/8/2010	<1.0	<1.0	<1.0	<3.0
MW-8	3/10/2011	2	<1.0	<1.0	<3.0
MW-8	6/15/2011	4.1	<1.0	<1.0	<3.0
MW-8	9/13/2011	1.9	<1.0	<1.0	<3.0
MW-8	1/6/2012	2.4	<1.0	<1.0	<3.0
MW-8	4/6/2012	<1.0	<1.0	<1.0	<3.0
MW-8	6/12/2012	2.5	<1.0	<1.0	<3.0
MW-8	9/27/2012	<1.0	<1.0	<1.0	<3.0
MW-8	12/7/2012	<1.0	<1.0	<1.0	<3.0
MW-8	3/4/2013	<1.0	<1.0	<1.0	<2.0
MW-9	3/20/2000	<0.5	1.4	<0.5	1.5
MW-9	6/7/2000	<0.5	<0.5	<0.5	<1.5
MW-9	2/13/2001	<1.0	<1.0	<1.0	<1.0
MW-9	5/9/2001	<1.0	<1.0	<1.0	<1.0
MW-9	11/2/2001	150	<2.0	<2.0	<2.0
MW-9	9/24/2003	86	<2.0	<2.0	<5.0
MW-9	12/17/2003	69	<2.0	<2.0	<5.0
MW-9	12/4/2004	5.2	<2.0	<2.0	<5.0
MW-9	9/19/2004	45	<2.0	<2.0	<5.0
MW-9	3/9/2005	3.8	<2.0	<2.0	<5.0
MW-9	6/16/2005	<2.0	<2.0	<2.0	<5.0
MW-9	9/17/2005	<2.0	<2.0	<2.0	<5.0
MW-9	12/1/2005	<2.0	<2.0	<2.0	<5.0
MW-9	3/20/2010	<1.0	<1.0	<1.0	<3.0
MW-9	6/22/2010	<1.0	<1.0	<3.0	<3.0
MW-9	9/16/2010	8.6	<1.0	<1.0	<3.0
MW-9	12/8/2010	7.8	<1.0	<1.0	<3.0
MW-9	3/10/2011	<1.0	<1.0	<1.0	<3.0
MW-9	6/15/2011	<1.0	<1.0	<1.0	<3.0
MW-9	9/13/2011	<1.0	<1.0	<1.0	<3.0
MW-9	1/6/2012	<1.0	<1.0	<1.0	<3.0
MW-9	4/6/2012	<1.0	<1.0	<1.0	<3.0
MW-9	6/12/2012	<1.0	2.1	<1.0	<3.0
MW-9	9/27/2012	<1.0	<1.0	<1.0	<3.0
MW-9	12/7/2012	<1.0	<1.0	<1.0	<3.0
MW-9	3/4/2013	<2.0	<2.0	<2.0	<4.0

TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
JICARILLA CONTRACT 147-6
RIO ARRIBA 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	1,000	700	620
MW-9	6/25/2013	<2.0	<2.0	<2.0	<4.0
MW-9	6/27/2017	<1.0	<1.0	<1.0	<1.5
MW-9	6/26/2018	<1.0	<1.0	<1.0	<1.5
MW-9	6/26/2019	<1.0	<1.0	<1.0	<2.0
MW-9	6/15/2020	<1.0	<1.0	<1.0	<2.0
MW-10	3/20/2000	0.8	2.9	<0.5	1.5
MW-10	6/7/2000	<0.5	<0.5	<0.5	<1.5
MW-10	2/13/2001	<1.0	<1.0	1.5	<1.0
MW-10	5/9/2001	<1.0	<1.0	<1.0	<1.0
MW-10	11/2/2001	<1.0	<2.0	<2.0	<2.0
MW-10	4/6/2012	NS	NS	NS	NS
MW-10	6/12/2012	NS	NS	NS	NS
MW-10	9/27/2012	NS	NS	NS	NS
MW-10	12/7/2012	<1.0	<1.0	<1.0	<3.0
MW-10	3/4/2013	NS	NS	NS	NS
MW-10	6/25/2013	<2.0	<2.0	<2.0	<4.0
MW-11	12/2/2013	<1.0	6.5	2.7	39
MW-11	6/27/2017	<1.0	<1.0	<1.0	<1.5
MW-11	12/1/2017	<1.0	<1.0	<1.0	<2.0
MW-11	6/26/2018	<1.0	<1.0	<1.0	<1.5
MW-11	6/26/2019	<1.0	<1.0	<1.0	<2.0
MW-11	6/15/2020	<1.0	<1.0	<1.0	<2.0
MW-12	12/2/2013	12	<1.0	74	<2.0
MW-12	6/16/2014	3.0	<1.0	42	<2.0
MW-12	12/2/2014	2.7	<1.0	29	<2.0
MW-12	6/18/2015	6.5	<1.0	36	<1.5
MW-12	9/25/2015	<1.0	<1.0	16	<1.5
MW-12	12/18/2015	11	<1.0	56	<2.0
MW-12	6/14/2016	5.2	<1.0	28	<2.0
MW-12	6/27/2017	1.6	<1.0	22	<1.5
MW-12	12/1/2017	2.1	<1.0	25	<2.0
MW-12	6/26/2018	<1.0	<1.0	4.7	<1.5
MW-12	6/26/2019	2.5	<1.0	3.6	<2.0
MW-12	6/15/2020	DEST	DEST	DEST	DEST

TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
JICARILLA CONTRACT 147-6
RIO ARriba 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	1,000	700	620
MW-13	12/1/2017	<2.0	<2.0	<2.0	<4.0
MW-13	6/26/2019	NS-Dry	NS-Dry	NS-Dry	NS-Dry
MW-13	6/15/2020	NS-Dry	NS-Dry	NS-Dry	NS-Dry
MW-14	12/1/2017	<2.0	<2.0	<2.0	<4.0
MW-14	6/26/2018	8.1	<1.0	<1.0	47
MW-14	6/26/2019	13	<1.0	<1.0	25
MW-14	6/15/2020	NS	NS	NS	NS

Notes:

DEST - monitoring well is destroyed

µg/L - micrograms per liter

NMWQCC - New Mexico Water Quality Control Commission

NS - not sampled

< - indicates result is less than laboratory reporting detection limit

* - indicates sample was diluted

** Sample identified as MW-4 on laboratory reports was later determined to be an unknown well and MW-4 was determined to be destroyed

Bold - indicates sample exceeds NMWQCC standard

ENCLOSURE A – GROUNDWATER SAMPLING FORMS

848 E. 2nd Avenue
Durango, Colorado 81301
T 970.385.1096

Date: 6/15/20

848 E. 2nd Avenue
Durango, Colorado 81301
T 970.385.1096

Released to Imaging: 1/3/2022 9:24:10 AM

848 E. 2nd Avenue
Durango, Colorado 81301
T 970.385.1096

Date: 6/18/20

848 E. 2nd Avenue
Durango, Colorado 81301
T 970.385.1096

Groundwater Sample Collection Form



LT Environmental, Inc.

848 E. 2nd Avenue
Durango, Colorado 81301
T 970.385.1096

Project Name: Groundwater Monitoring
Project Number: _____

Project Location: Jicarilla 147-6
 Sampler: Eric Carroll

Sample ID: Mw-12
Sample Date: 6/15/2020
Laboratory: Hall Environmental
Analyses: BTEX 8021

Matrix: Groundwater
Sample Time: _____
Shipping Method: Hand Delivery

Depth to Water: Destroyed
Time:

Total Depth of Well: _____
Depth to Product: _____

Vol. of Water to Purge: _____ (height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols

Method of Purging: Dedicated PVC Bailer

Method of Sampling: Dedicated PVC Bailer

[illegible]

Comments: well missing bank of wash is eroded

Describe Deviations from SOP:

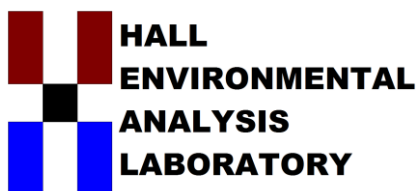
Signature: Elli Carroll

Date: 6/15/20

848 E. 2nd Avenue
Durango, Colorado 81301
T 970.385.1096

Date: 6/15/20

ENCLOSURE B – LABORATORY ANALYTICAL REPORT



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

June 18, 2020

Brooke Herb

Harvest

1755 Arroyo Dr.

Bloomfield, NM 87413

TEL: (505) 632-4475

FAX:

RE: Jicarilla 147-6

OrderNo.: 2006783

Dear Brooke Herb:

Hall Environmental Analysis Laboratory received 4 sample(s) on 6/16/2020 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 2006783

Date Reported: 6/18/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest

Client Sample ID: MW-6

Project: Jicarilla 147-6

Collection Date: 6/15/2020 2:00:00 PM

Lab ID: 2006783-001

Matrix: GROUNDWA

Received Date: 6/16/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	3800	50	P	µg/L	50	6/17/2020 9:22:26 AM	B69710
Toluene	ND	5.0	P	µg/L	5	6/17/2020 9:45:57 AM	B69710
Ethylbenzene	150	5.0	P	µg/L	5	6/17/2020 9:45:57 AM	B69710
Xylenes, Total	230	10	P	µg/L	5	6/17/2020 9:45:57 AM	B69710
Surr: 4-Bromofluorobenzene	112	80-120	P	%Rec	5	6/17/2020 9:45:57 AM	B69710

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		

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Analytical Report

Lab Order 2006783

Date Reported: 6/18/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest

Client Sample ID: MW-11

Project: Jicarilla 147-6

Collection Date: 6/15/2020 12:26:00 PM

Lab ID: 2006783-002

Matrix: GROUNDWA

Received Date: 6/16/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	6/17/2020 10:56:52 AM	B69710
Toluene	ND	1.0		µg/L	1	6/17/2020 10:56:52 AM	B69710
Ethylbenzene	ND	1.0		µg/L	1	6/17/2020 10:56:52 AM	B69710
Xylenes, Total	ND	2.0		µg/L	1	6/17/2020 10:56:52 AM	B69710
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	6/17/2020 10:56:52 AM	B69710

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		

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Analytical Report

Lab Order 2006783

Date Reported: 6/18/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest

Client Sample ID: MW-3

Project: Jicarilla 147-6

Collection Date: 6/15/2020 12:55:00 PM

Lab ID: 2006783-003

Matrix: GROUNDWA

Received Date: 6/16/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	570	50	P	µg/L	50	6/17/2020 2:29:56 PM	B69710
Toluene	110	5.0	P	µg/L	5	6/17/2020 11:20:28 AM	B69710
Ethylbenzene	200	5.0	P	µg/L	5	6/17/2020 11:20:28 AM	B69710
Xylenes, Total	2000	100	P	µg/L	50	6/17/2020 2:29:56 PM	B69710
Surr: 4-Bromofluorobenzene	119	80-120	P	%Rec	5	6/17/2020 11:20:28 AM	B69710

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		

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Analytical Report

Lab Order 2006783

Date Reported: 6/18/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest

Client Sample ID: MW-9

Project: Jicarilla 147-6

Collection Date: 6/15/2020 1:20:00 PM

Lab ID: 2006783-004

Matrix: GROUNDWA

Received Date: 6/16/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	6/17/2020 11:44:27 AM	B69710
Toluene	ND	1.0		µg/L	1	6/17/2020 11:44:27 AM	B69710
Ethylbenzene	ND	1.0		µg/L	1	6/17/2020 11:44:27 AM	B69710
Xylenes, Total	ND	2.0		µg/L	1	6/17/2020 11:44:27 AM	B69710
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	6/17/2020 11:44:27 AM	B69710

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		

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2006783

18-Jun-20

Client: Harvest
Project: Jicarilla 147-6

Sample ID: mb1	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBW	Batch ID: B69710		RunNo: 69710							
Prep Date:	Analysis Date: 6/17/2020		SeqNo: 2420057		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	21		20.00		103	80	120			

Sample ID: 100ng btex lcs	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSW	Batch ID: B69710		RunNo: 69710							
Prep Date:	Analysis Date: 6/17/2020		SeqNo: 2420058		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	17	1.0	20.00	0	83.9	80	120			
Toluene	17	1.0	20.00	0	85.2	80	120			
Ethylbenzene	17	1.0	20.00	0	83.5	80	120			
Xylenes, Total	51	2.0	60.00	0	84.7	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		105	80	120			

Sample ID: 2006783-001ams	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: MW-6	Batch ID: B69710		RunNo: 69710							
Prep Date:	Analysis Date: 6/17/2020		SeqNo: 2420061		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4000	5.0	100.0	3532	434	80	120			ES
Toluene	100	5.0	100.0	0	101	80	120			
Ethylbenzene	280	5.0	100.0	152.6	128	80	120			S
Xylenes, Total	570	10	300.0	234.1	111	68.3	130			
Surr: 4-Bromofluorobenzene	120		100.0		115	80	120			

Sample ID: 2006783-001amsd	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: MW-6	Batch ID: B69710		RunNo: 69710							
Prep Date:	Analysis Date: 6/17/2020		SeqNo: 2420062		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4000	5.0	100.0	3532	430	80	120	0.101	20	ES
Toluene	100	5.0	100.0	0	102	80	120	0.433	20	
Ethylbenzene	280	5.0	100.0	152.6	129	80	120	0.0996	20	S
Xylenes, Total	570	10	300.0	234.1	110	68.3	130	0.120	20	
Surr: 4-Bromofluorobenzene	120		100.0		116	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 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



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: 2006783

RcptNo: 1

Received By: Isaiah Ortiz

6/16/2020 8:00:00 AM

I-OX

Completed By: Isaiah Ortiz

6/16/2020 8:08:24 AM

I-OX

Reviewed By:

em 6/16/20

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: JR 6/16/20

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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

Remarks:

Please cc: ecarroll@tenv.com

Chain-of-Custody Record													
Client: <u>Harvest Four corners</u>		☒ Standard ☐ Rush		Turn-Around Time: _____									
Mailing Address: <u>Kidun Hqns</u>		Project Name: <u>Jicarilla 147-G</u>		Project #: _____									
Phone #: _____		Project Manager: <u>Brooke Herb</u>		Sampler: <u>E. Carroll</u>									
email or Fax#: <u>kheng@harvest.wildscience.com</u>		On Ice: ☒ Yes ☐ No		# of Coolers: <u>1</u>									
QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)		Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other _____		Cooler Temp (including CF): <u>3.4 - 0.1</u> <u>3.4</u> (°C)									
Date		Time		Matrix		Sample Name		Container Type and #		Preservative Type		HEAL No.	
6/15		1400		CW		MW-C						7006783	
↓		1296		↓		MW-11						-001	
↓		1255		↓		MW-3						-002	
↓		1320		↓		MW-9						-003	
												-004	
Date: <u>6/15</u>		Time: <u>1400</u>		Relinquished by: <u>Kheng</u>		Received by: <u>Monte Llera</u>		Via: _____		Date: <u>6/15/2020</u>		Time: <u>1625</u>	
Date: <u>6/15/2020</u>		Time: <u>1810</u>		Relinquished by: <u>Monte Llera</u>		Received by: <u>Monte Llera</u>		Via: _____		Date: <u>6/15/2020</u>		Time: <u>0800</u>	

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 56171

CONDITIONS

Operator: Harvest Four Corners, LLC 1111 Travis Street Houston, TX 77002	OGRID: 373888
	Action Number: 56171
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. Continue with monitoring plan as stated within 2020 Annual Groundwater Report 2. Submit annual report no later than March 31, 2022	1/3/2022